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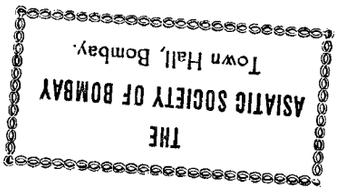

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VOL. II. LIST OF SUBJECTS.

FRONTISPIECE :—T[illegible] TRANSEPT.

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XXII. MACHINERY [illegible]

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XXIII. [illegible] MINERALS :—

OBJECTS PROMINENT.—Minerals, [illegible]ranged by Thomas Sopwith, Esq.—Mr. Beaumont's Specimens of Si[illegible]—Duke of Buccleugh's Specimens of Ores, &c.—Arkansas's Mining Com[illegible], Lead Ore, &c.—Galena, from the Isle of Man. On the wall.—Imitatio[illegible]arbles, by Hopkins—Inlaid Flooring, by Cowell and Thomas—Model of G[illegible] Door, by Emery.

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OBJECTS PROMINENT.—Plan of Liverpoo[illegible]ase of Crape, Muslin, &c., J. H. Young, Glasgow—Cotton Goods, D. an[illegible] Anderson, Glasgow—Gingham, Lotham and Parker, Carlisle; Dixon and [illegible] ditto—Hair Seating, Laycock and Son, Sheffield.

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OBJECTS PROMINENT.—Slates from the various Quar[illegible]ries—Columns—Anchors—[illegible]—Masses of Stones—Geological Specimens—Ma[illegible]trochetti's Coup de Lion, and the Steam Engine in the distance.

XXVI. THE BRITISH NAVE.

XXVII. CLOSING CEREMONY.

INDIA I.

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A PECULIAR value and interest were attached to the collection exhibited by the East India Company in the Great Exhibition, from the fact that it was impossible to find it reproduced in any other place. The greater part of the Indian articles were not suitable to European tastes, and few are ever sent here, because we are generally backward in perceiving that with some very slight modifications they might be adapted to our wants. There were, for example, several gold and silver tissues which a very little alteration would so transform as to render them conformable to the most delicate and refined female taste. Let white silk be substituted for the silver, and yellow silk for the gold, and all would be accomplished, without the loss of those perfect designs, the opportunity of studying which has been stated to have been "a boon to the whole of Europe."

Indian art truly deserved the preference which has been given to it; it resembled that of no other nation. It has not the strange wildness which appears to be inherent to Chinese taste, nor the regularity of Greek and Roman designs, nor that staring vulgarity so commonly found at the present day: it is an art by itself, independent, and seems never to have altered, or to have borrowed its principles. It was evident that the weaver's skill had risen to high perfection in India: even putting aside the Cashmere shawls which have become the types of fashion and good taste, everything exhibited by the East India Company formed a collection of master-pieces. Muslins embroidered with gold, scarves of every colour and of the most exquisite taste, table-covers enamelled with flowers, tissues of every description, shaded with emerald green, saddles, cloaks, stuffs for hangings and curtains, kerchiefs of every hue which nature has lavished upon the wing of the butterfly, all were to be found in this brilliant collection, which could only be formed by a company as powerful as that which reigns supreme in India;—the command went forth and the East came.

Among the objects represented in the accompanying plate is the crown or *tuj* as worn by the King of Oude; but it was exhibited divested of its jewels. His kingdom was for a lengthened period so despicably mismanaged by its native authorities, that, from being one of the richest states of Hindostan, it became, a few years ago, one of the poorest and most wretched, being especially distinguished for anarchy and disorder. The people were so independent of the royal authority, that they only yielded a very imperfect obedience, and as lately as 1830, Oude was the theatre of a civil war between the Sovereign and his military chiefs. The province is now under the protection of Great Britain, and secured from foreign aggression; and it is to be regretted that our government did not also interfere in its internal administration, so far as to introduce some regularity and efficiency into the management of the native concerns by the King, and aid him through the intervention of the British Resident at Lucknow, to repress the disorder of the people.

The present of the Rajah of Travancore to the Queen, consisting of a splendid ivory chair of state, with a foot-stool, beautifully carved and ornamented with jewels, was greatly admired. It was used by His Royal Highness Prince Albert, at the ceremony which took place immediately before the closing of the Exhibition, when Lord Canning, the President of the Council of Chairmen of the Juries, presented to him, as the Head of the Royal Commission, the several Reports drawn up upon the subjects which had been submitted to the thirty-four Juries, composed of the most eminent men of all nations, together with the names of the Exhibitors whom they had judged entitled to rewards.

In this representation of the Indian Collection will also be seen a suit of native apparel, consisting of a gold figured muslin turban and a waistband to match, a pair of kinkob trowsers, and a muslin vest. Such appears to be the usual dress of the Rajah of Boondie who contributed them. His Rajahship is in the province of Rajpootana, and under the protection of the British Government: although small, this state is important, as it contains the principal passes from the south into Upper Hindostan.

The large collection of saddles, howdahs, and parasols, which fill up part of this view, as well as of the others of the Indian Department, show a more decided European influence in their details than the shawls, to which we have alluded above, and have much similarity with the specimens sent from Constantinople. The devoted admirers of the shawl patterns of India would, of course, exclaim against innovation or alteration of the designs, and therein lies the chief cause that in the manufactures of Norwich or Paisley, the peculiar, tail-like figure, known as the "pine," is elaborated *ad nauseam*, while other Indian details, and the tasteful selection of the proper colours, are wholly neglected. In the Exhibition, however, there were numerous attempts to escape from the trammels of this Hindoo conventionality, which on its first appearance in Europe was thought so little of by one fair lady, to whom a specimen was presented, as to induce her to make it useful as a substitute for an "ironing blanket," in the getting up of linen; and by another, as to cause her to declare that it was only fit to make into an under petticoat! One celebrated French house went so far as to present a grand architectural façade, with columns, trees, and flags, all woven in the most approved manner and in the legitimate colours; yet all these were for the adornment of the back of a lady, in a scrambling effort after that novelty which the admirers of this very article say is impossible.

INDIA Nº 1

Dickinson Bros 114 New Bond Street

INDIA II.

The rich collection of articles of Jewellery exhibited by the East India Company was displayed in glass cases, enclosed within iron railings, on the North and South sides of the Nave and near the Transept. The accompanying plate only represents one of these cases; we shall not however confine our remarks to that alone, but select the most splendid and interesting objects contained in them both, and which were so splendid as to attract the attention of all visitors to the Crystal Palace.

The most valuable gem was the "Durria-i-Noor," or Sea of Light, set as an armlet, and surrounded by ten smaller diamonds: the jewel although of large size and great purity, has lost much of its value by having been very ill-cut. Raised immediately behind it was a gorgeous coat of a Sikh Chief, made at Delhi: the robe is composed of *kinkob* or cloth of gold, with very large epaulettes in pearls, and on each, two valuable emerald drops, and a deep border of rich gold embroidery, beautifully overlaid with pearls, rubies and emeralds; the value of each epaulette was estimated at £5,000. In front of this State dress were placed the trowsers also made of kinbob, and the cap of an Indian Chief. On each side lay a pair of "Moorchals," in embossed and filagree gold, containing a sort of fan of the feathers of the Bird of Paradise. These costly and elegant ornaments are in India the insignia of the highest offices, and according to the native custom only a few of the Indian potentates are entitled to bear them in the presence of the Governor General. Among the Princes of India privileged to use them are the Emperor of Delhi, the King of Lucknow, and the Nabob of the Carnatic.

The golden girdle of a native Chief studded with nineteen emeralds, each about an inch and a half square, must have been of enormous value, for, besides the emeralds which were all cut thin and flat, and had various inscriptions from the Koran engraved upon them, (a proceeding which, although it would greatly depreciate their value in this country, would render them almost invaluable in the eyes of a Mahommedan Chief,) the girdle was surrounded on the top and bottom by a row of very fine diamonds. It is probable, however, that even the value of this magnificent ornament was surpassed by a pair of armlets, containing three large rubies uncut, but just sufficiently polished to shew their extreme brilliancy and depth of colour. These rubies were formerly the property of the Emperors of Delhi, and gained some additional value by the traditional legends attached to their possession.

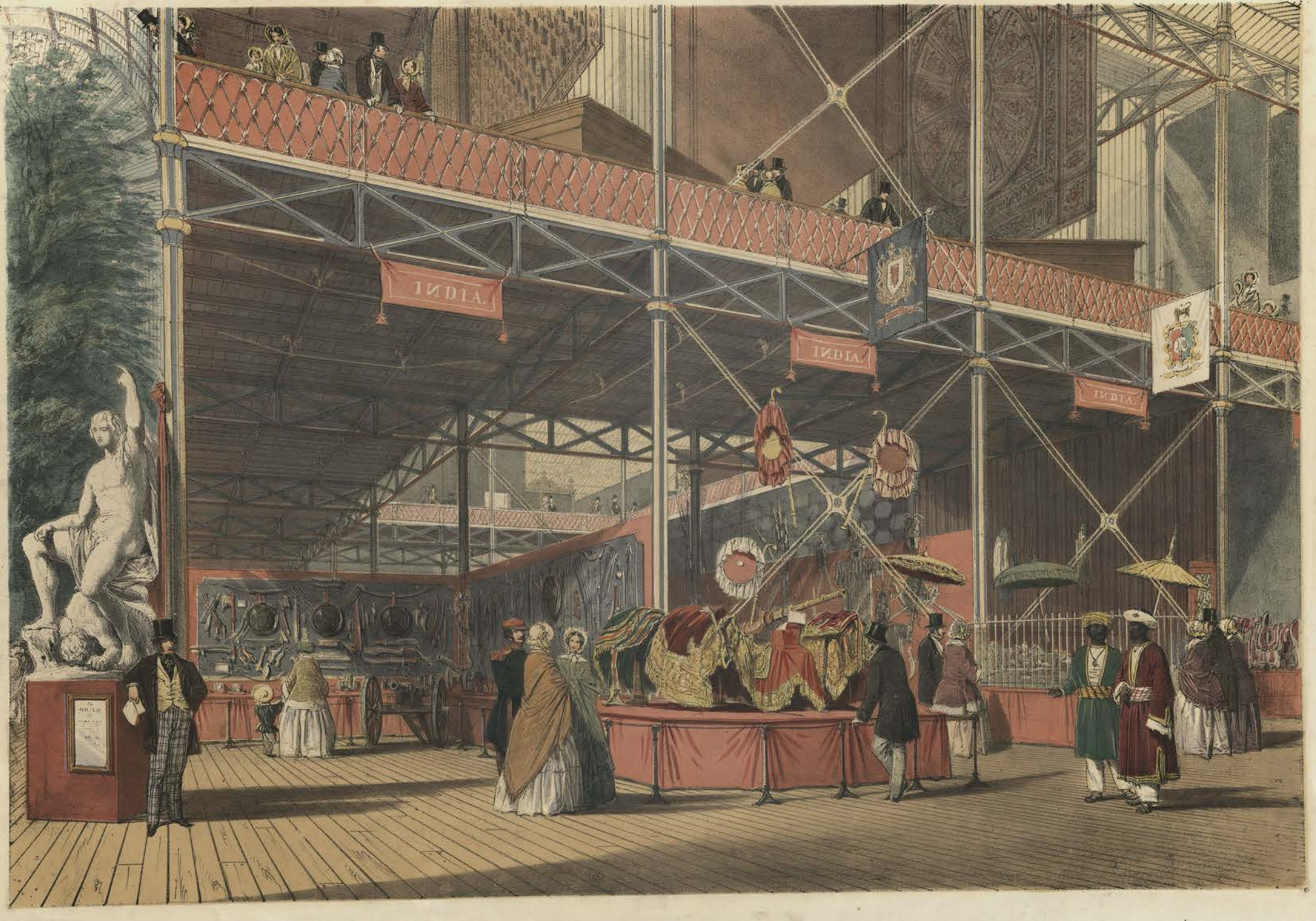
Close by lay a pearl necklace consisting of two hundred and twenty four large pearls, and another shorter one ornamented with four very fine spinelli rubies, set in exquisitely wrought gold, the very pattern of which, almost resembling the edges of point lace, seemed to harmonise with the stones.

The two Views of the Indian Department from the Transept include the collection of arms from various territories in India, and the models of ships, netting, and fishing-tackle, as used in the far off Eastern seas. What numerous implements of destruction! What various forms for guns, cannons, pistols, swords, daggers curiously jewelled, with straight blades and curved blades, carved, gilt or enamelled—nearly all with a view to destroy, few intended as tools to produce! It would almost lead us to suppose that life is found to be too long in our Indian possessions, and thought to be an evil which could not be done away with too soon. On the other hand the models of the vessels employed by the natives, conveyed the idea that they were constructed rather for piratical expeditions, than to carry on commerce with the neighbouring States. The Collection in the Exhibition included the well-known Catamarans of Madras, remarkable for their buoyancy, which enables them to pass through the surf at different parts of the Coast, while the boats of this Country could not live on the waves: the long Snake-boat of Cochin, and the Dingee or Bum-boat of Bombay, employed in carrying persons to and from vessels in the harbour, and which are generally hired by the captains of ships with a view to keep their own boats from being knocked about.

At the intersection of the Western Nave with the Transept was placed one of the numerous allegorical representations of Satan vanquished by the Archangel Michael. In this group, the sculptor Mr. Lough, attempted to illustrate the moment when

> "Satan first knew pain,
> And writhed him to and fro convolved;
> * * * * * *
> Gnashing for anguish, and despite, and shame,
> To find himself not matchless;"

while the Archangel, having overcome the Evil one, raised his hand to Heaven, and gave God the glory for the victory which he had just obtained. Although the two figures were, perhaps, not quite well combined, the form and attitude of the victorious Michael were both grand and noble.



INDIA. N° 2

Dickinson Bro^s 114 New Bond Street

INDIA. III.

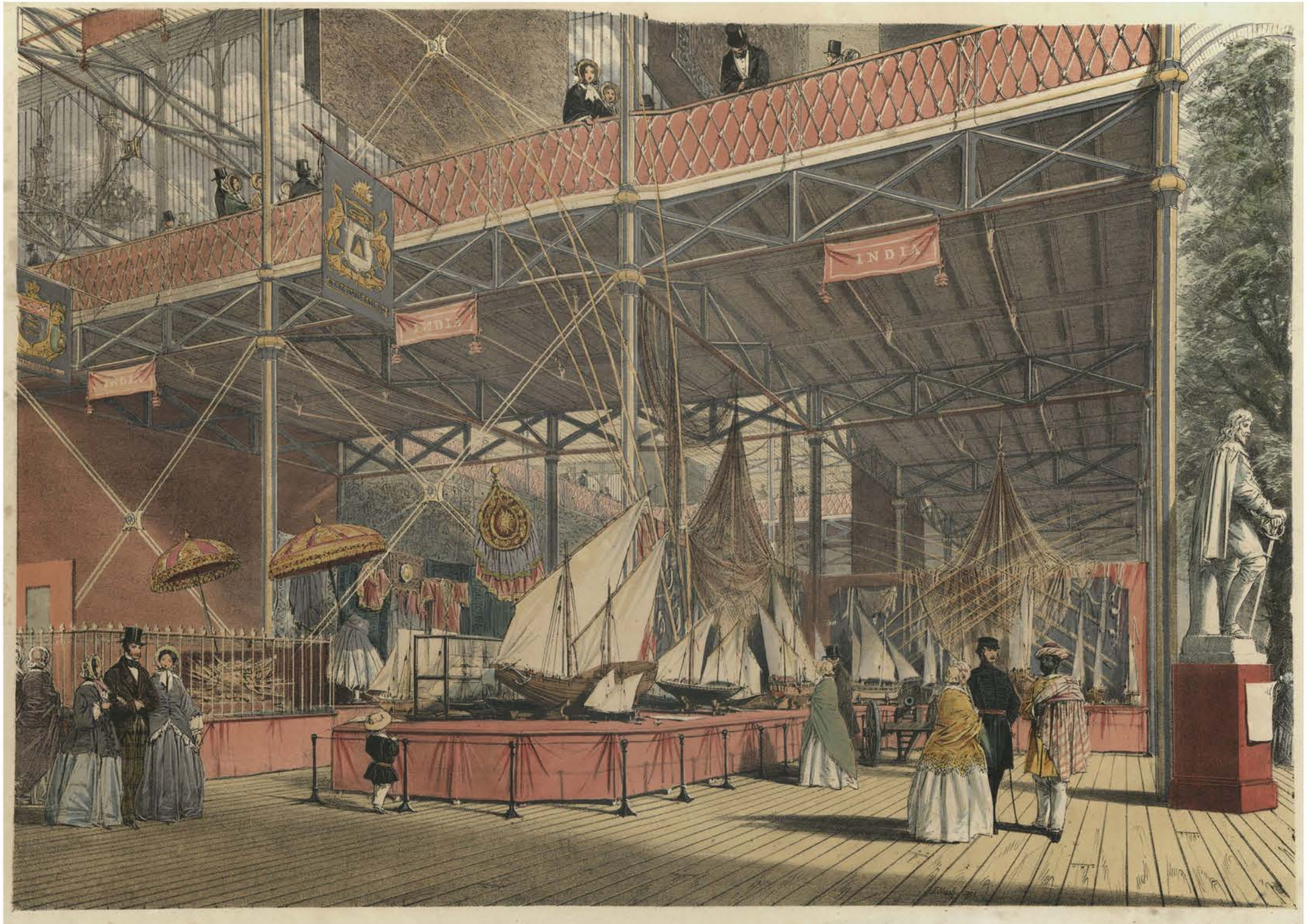
We have before alluded in general terms to the case of jewellery exhibited by the East India Company, and as the accompanying plate presents a view of the Indian Department as seen from the Transept, we will take the opportunity of giving a few descriptive particulars with reference to the Great Diamond, called "Koh-i-Noor," or "Mountain of Light," which was exhibited by Her Majesty in the Main Avenue of the Eastern division of the Exhibition Building.

The Koh-i-Noor has long enjoyed both European and Indian celebrity, and has accordingly been made the subject of traditionary fable, as well as of historical record. Hindoo legends declare that it was found in the Mines of the South of India about four or five thousand years ago, during what is called the Great Indian War, and was worn by one of the warriors, Karna King of Anga, whose spartan valour and glorious death are immortalised in a heroic poem of great antiquity, called "Mahábhárata." During an interval of nearly three thousand years, we find no authentic account of the Great Diamond, but it appears that in the year 56, before Christ, it became the property of Vikramaditya, the Rajah of Ujayin, from whom it descended to his successors, the Rajahs of Malwa, until the principality was subverted by Mohammedan conquerors, into whose hands it fell with other spoils of infinite price, and who estimated its value at half of the daily expense of the whole world. The Mohammedans in their turn, were subjugated in the year 1306, by the armies of Ala-udin, the Sultan of Delhi, and according to the autobiography of the Sultan Baber, whose book is of undoubted authenticity, the jewel became with other treasures the property of the Sultans of Delhi.

The Pathan Kings of Delhi were supplanted by the Moguls of the house of Timur in the beginning of the 16th century, and the great diamond fell into the hands of Baber the first Sovereign of that dynasty, and passed eventually into the possession of the ruling family of Kabul. Nadir Shah, on his occupation of Delhi in 1739, compelled Mohammed Shah to give up everything of value which the Imperial Treasury contained. According to the family and popular tradition, Mohammed Shah was in the habit of wearing the jewel in the front of his turban, and on the first interview between himself and his wily conqueror, the latter insisted upon exchanging turbans, as a proof of regard and friendship. However this might have been, we need have little doubt that the great diamond was in the possession of Mohammed Shah at the time of the Persian invasion, and if it was, it most certainly changed masters, and became as is universally asserted the property of Nadir Shah, who is also said to have bestowed upon it the name of Koh-i-Noor. Upon the death of Nadir, the diamond which he had wrested from the unfortunate representative of the house of Timur, became the property of Ahmed Shah, the founder of the Abdali dynasty in the Kingdom of Kabul. Having thus traced the Koh-i-Noor to Kabul, there is little difficulty in giving a history of its subsequent fortunes. The jewel descended to the successors of Ahmed Shah, and in 1813 Shah Shuja was compelled to resign it to Rungeet Sing, whose nominal guest and actual prisoner he then was, for a lakh and twenty five thousand rupees, or about £12,000 sterling. Rungeet Sing was highly elated by the acquisition of this valuable gem, and wore it as an armlet on all state occasions. At the annexation of the Punjab by the British Government, the Civil Authorities took possession of the Lahore Treasury, under the stipulation previously made that all the property of the State should be confiscated to the East India Company in part payment of the debt due by the Lahore Government, and of the expenses of the War. It was at the same time stipulated that the Koh-i-Noor, being a State jewel and not readily convertible into rupees, should be surrendered to the Queen of England. Lord Dalhousie sent it to England in charge of two Officers, and on the 3rd of July 1850, it was presented to Her Majesty by the Chairman of the Court of Directors of the East India Company—an appropriate and dignified close to its eventful career.

The truth of all this strange history has been denied, as it is impossible to prove the identity of the Koh-i-Noor, with the diamond acquired by the Conqueror Ala-udin, to whom we have made allusion above: this fact is, however, invariably affirmed by the members of the ruling family of Kabul, and by the jewellers of Kabul and Delhi.

The Executive Committee found great difficulty in exhibiting the Koh-i-Noor in a satisfactory manner, as on a close examination the facets appeared to have been cut in a most inartistic manner, and by no means to bear the high polish which a diamond of its great purity ought to exhibit. Since the close of the Building, the Koh-i-Noor has been re-cut under the superintendence of Messrs. Garrard, and its appearance has been much improved. It is almost impossible to estimate the value of the famous gem, but the following argument has been used: "the Koh-i-Noor cost one million sterling, so many years ago; if this sum had been allowed to accumulate with the interest thereon, it would amount to-day to fifty millions—therefore the diamond is worth fifty millions." It is impossible to admit this calculation, notwithstanding the fact that ladies do appear to consider the attractions of diamonds as ornaments, quite irresistible. An old Spanish aphorism says "Love in youth, in old age, respect:" these possessions are prized too—would that they were more so, for they are far less expensive than brilliants!



INDIA N°3

Dickinson Bro.s 114, New Bond Street.

INDIA.

ENGLAND owes to the East India Company the possession of this vast and important country, celebrated throughout all ages for its natural riches. It was in the year 1599 that an association was formed, with the title of "The Governor and Company of Merchants of London trading to the East Indies," and with £30,000 only as capital. Having obtained a charter from the crown, they commenced operations, and the result of their first adventure, and of those of several subsequent years, was a commercial profit of about 150 per cent. In 1624 the King of England gave authority to the Company to exercise the functions of government in the territories which they had acquired, power being granted them to punish their servants either by civil or martial law. The three principal Presidencies into which British India is divided—Bombay, Madras, and Calcutta—had each its president, and a council of about twelve members, appointed by commission of the Company, as early as the year 1707. Several amalgamations with rival companies took place, and the capital was gradually increased to £6,000,000, which is the nominal sum on which dividends are now paid; but nevertheless the East India Company, since the whole trade has been thrown open to individual enterprise, have never been able to compete with private traders, chiefly on account of the large standing army they are obliged to keep, and the costly way in which their trade is conducted. Such is a brief view of the origin of, perhaps, the most remarkable commercial company in the world, who have established themselves in the land which has, from the earliest historical times, exported its far-famed and valuable productions into the Western nations of the earth. Although no longer the powerful body they once were, their dominion may soon be taken from them altogether; for the time is rapidly approaching when a new Charter must be applied for, and then will the question be warmly discussed whether the Home Government could not, by taking the management of affairs into its own hands, dispense entirely with the intermedium of the Company.

The gorgeous display of the contributions from the East Indies impressed every visitor with the importance such possessions must be to Great Britain; and legitimate was the pride with which our countrymen wandered through the large space which the rich Indian productions filled, when they remembered that they were exhibited, by England, and not by any foreign land. In the autumn of 1849 the Directors of the Honourable East India Company decided upon contributing, as largely as time would permit, to the Exhibition, and by January, 1850, Dr. Forbes Royle, to whom the task had been confided, had completed the lists of raw products and manufactured articles, which it was considered most desirable to obtain from India. These lists were sent to the different Presidencies, and translated for distribution among the natives; the Court at home, at the same time, calling the attention of the Supreme Government to the occasion when "an opportunity will be afforded for the latent resources of distant provinces, and the skill of the least known artist, to compete with the produce of the most favoured regions, or the works of the most successful genius." Central committees were formed at Calcutta, Madras, and Bombay, and numerous local committees in many of the principal towns were presided over by men notorious for their exertions in the great cause, and the success of their efforts is to be measured by the satisfaction with which the man of science, the merchant, the manufacturer, and the artist studied the contributions most new and interesting to them; admiring, on the one hand, the well-chosen specimens of the natural productions of the land, and on the other, the ingenuity and delicacy of the workmanship of the manufactured articles.

In the centre of the accompanying Plate is represented the Howdah, a kind of state palanquin, in ivory, which was exhibited by her Majesty. This howdah, with magnificent trappings worked in gold and silver, (intended to be borne on the back of an elephant,) was sent to the Queen by the Nawab Nazim of Moorshedabad. The Commissioners finding that no artificial contrivance would answer the purpose, sought for a long time in vain for a stuffed elephant on which to display this howdah: at length it was discovered that the Museum of Saffron Waldon could boast of a specimen, and a trusty messenger was forthwith despatched to negociate with the authorities for the loan of it; they agreed to allow the animal to be taken to London for the purpose, and though not a large one of its kind, it was a very great additional attraction.

The Nawab Nazim sent her Majesty, at the same time, a magnificent reception seat with a canopy of purple velvet, embroidered in gold, and supported on a framework of silver, with two "moorchals," or emblems of dignity, used by the princes of India on state occasions, made of pure gold, and containing feathers of the Birds of Paradise: part of the native throne is represented in this view.

INDIA Nº 4

INDIA V.

If the East India Company had conceived the idea of fitting up a large portion of the Exhibition Building with the machines and implements employed by the Hindoos, and had, at the same time, imported the native workmen to use them, and grouped Indians of every caste around as spectators, they could not have better succeeded in portraying the peculiarities of oriental costume and habits, than by exhibiting those interesting models in clay and wood, illustrative of many ceremonials and customs of a novel and characteristic description. They did not merely represent machines and men, but had so much life and sprightliness infused in their every attitude, that they looked more as if they were intended for models of *manners*, if we may be permitted to use the expression, and the visitor almost expected the Lilliputian groups to move and speak, and really perform their several avocations, not as automatons, but as intellectual men and women.

One of the best and most complete of these models was contributed to the collection by Mr. Mansfield, of the Civil Service. It represented a Collector of Revenue making his annual settlement with the cultivators. The official has pitched his camp near a small village, in which are seen rows of houses, with shops displaying all kinds of wares for sale. On the banks of the river, which flows close by, are groups of women filling their pitchers with water and washing their clothes; while, in the fields around are luxuriant crops of corn and the sugar-cane. The Collector is seated in a tent, surrounded by other revenue-officers of the district, and about the entrance are a body of ryots, with petitions for the remission of part of their revenue payments. The horses of the servants and others, forming the officer's escort, are picketted at a short distance, and near them are the camels engaged for the transport of the tents and baggage. The three hundred figures which compose these characteristic groups, were all removable at pleasure; and a numbered list of them, denoting their position on the platform, of nine feet square, was sent by the Exhibitor to serve as a key for arranging the whole.

In the back-ground of the accompanying view of the Indian Department, are represented two magnificent specimens of Eastern furniture, which deserve notice. Deo Naryn Sing, of Benares, exhibited a royal bedstead, the covering of which was in silk and velvet, and the mattress in velvet; but the bedstead of enamelled silver from Cashmere, was still more splendid and, at the same time, more tasteful. The hangings of the latter were of Cashmere shawl, gracefully festooned, and the material of the pillows and mattress were of the finest description. However, the difficulty of regarding both comfort and grandeur in the manufacture of their couches, was as apparent as in some of the regal resting places in our own country; and the Indian bedsteads were more calculated to gratify the eye by their gorgeous splendour, than to tempt the wearied limbs to seek repose beneath their glittering shelter.

The Hindoos are fond of carving in wood, horn, and ivory; the first they must have practised from very early times, probably for their idols; and they have now arrived so near perfection, that even the best English houses might well be furnished with such chairs, sofas and book-cases, as were exhibited from Bombay, elegantly carved in black wood. The ivory carvers of Berhampore contributed a variety of specimens of their work, and deserved much credit for elaborateness of detail and truth of representation. To illustrate the facility with which they could carve the most minute objects, as well as those of large size,—there was an elephant enclosed in the shell of a pea,—and that they were capable of doing new things, when required, was shown in the set of chessmen carved from the drawings of Layard's "Nineveh."

Many other materials, some of them of the most opposite kinds, are employed by the Indian carvers, on which to exercise their skill. All the elaborate detail of the richly ornamented Hindoo architecture of the south of India, was brought out in the soft and yielding pith of the marsh-plant; while necklaces for men, and bracelets for women were manufactured out of hard white shells imported into Calcutta from Ceylon.

On the walls that enclosed the objects which have just been noticed, were suspended a number of both large and small carpets, of which mention has been made elsewhere.

INDIA. N° 5.

INDIA. VI.

In the accompanying Plate the artist has represented that part of the space devoted to the East Indian Collection which was set apart for the display of the Raw Materials produced by that extensive peninsula. These were so numerous that the mere enumeration of them occupied several pages of the closely-printed catalogue; we therefore feel that it is impossible, in this short sketch, to give anything like a detailed description of the natural productions of our Indian territories, and must confine the following remarks to a few generalities of peculiar interest.

From the mineral kingdom, which was largely and well illustrated in the Exhibition, we may select iron and coal as the most remarkable productions. It has ever been a subject of surprise how so primitive a people as the Hindoos could have overcome the difficulties of smelting iron and of forging steel. A couple of natives will in a few hours construct a furnace of clay, from four to five feet high, leaving an opening in front about a foot or more in height, which is built up with clay at the commencement, and broken down at the end of each smelting operation. On each side of this opening are inserted tubes of clay in connection with the bellows, which are either made with the leaves of the forest, or a goat-skin stripped from the animal without ripping open the part covering the belly. As soon as the process of smelting the iron is concluded, the temporary wall in front is broken down and the bloom removed with a pair of tongs from the bottom of the furnace. When the iron is to be converted into steel, a quantity is packed into crucibles (about a pound in each) with materials producing carbon, and subjected to heat, urged by blast for about two hours and a half, when the process is considered to be completed; the crucibles are then taken out of the furnace and when cool are broken, and the steel is found in the form of a cake at the bottom. We find in a passage in Ezekiel a confirmation of the fact of the Hindoos having discovered the way of making steel at such early periods, where Dan and Javan are described as bringing "*bright iron*, cassia, and calamus," which are all Indian products, to Tyre.

The steel prepared by this simple method has long been an article of commerce from the west of India to the Persian Gulf, since it has proved itself admirably adapted for the fabrication of all cutting instruments. Mr. Heath, at one time the managing director of the Indian Iron and Steel Company, even goes so far as to say, "We can hardly doubt that the tools with which the Egyptians covered their obelisks and temples of porphyry and syenite with hieroglyphics, were made of Indian steel." There can be no doubt that its use was highly valued in the time of Alexander the Great, for we find that King Porus made him a present of thirty pounds of steel after his victory and generosity of conduct.

The Great Indian coal field which runs for sixty-five miles in length and twelve in breadth, is supposed to cross the Ganges and to extend to Cachar, from which place have been brought numerous specimens of coal. Mr. Jones, an English miner, opened the first colliery in India in the year 1815; three pits were sunk to the depth of ninety feet, and seven beams of the mineral were met with, one of them of the thickness of nine feet. Calcutta now consumes large quantities of coal, but chiefly for forges and steam navigation.

Among the vegetable productions we must remark the specimens of cotton, which is grown in every latitude in India. Generally speaking Indian cotton is very inferior to other kinds brought into the markets of Europe: but it is believed that this is not owing so much to the incapacity on the part of India to produce good cotton, as to the want of care in selecting the seed and in the culture of the plant.

England now obtains sheep's wool with other productions of the animal kingdom of British India; very few years ago such an idea would have been ridiculed. Several specimens were in the Exhibition; some fine Merino wool from Mysore, some from Lahore, and other kinds from the dry and cold climate of Thibet. Many of the animals there are furnished with a fine down, under the coarse outer wool: it is this which is chiefly employed for the Indian shawls, so well known for their useful qualities, and so admired for the elegance of their designs and their beautiful colours.

INDIA № 6

Dickinson Bro.s 114. New Bond Street

INDIA. VII.

MONSIEUR BRONGNIART, the ex-director of the porcelain manufactory at Sèvres, once remarked that Pottery affords the best record of the early ages of the human race, just as bones do of the earth. The antiquity of the art of fashioning clay into vessels of various shapes, and hardening it by the action of heat, renders it an object of especial interest. The allusions to the Potter's Wheel in the Old Testament indicate the prevalence of the art at an early epoch in the history of man, and this is abundantly confirmed by the annals of oriental nations, and by the material evidence of cups and other vessels of baked clay which are found in old tombs among the ancient cities of India, and in those of other parts of the world.

Little is known of Indian Pottery; indeed, the specimens preserved in our national collections have given birth to the very general idea that it is hemispherical in shape. The Great Exhibition proved that, although some of the vessels are certainly so formed for the convenience of being carried on the head, the Hindoo could, with his naked hands and the aid of the ancient potter's wheel, fashion vases which many of the best judges greatly admired for their elegant and even classical gracefulness of form: it has also been suggested that some of these beautiful shapes were of Etruscan origin, but there is no reason to believe that the Hindoos have ever had anything but their own unerring taste to guide them. Among the specimens of the Ceramic manufacture of India was a small statue of the Queen, by a native artist, which only served to show that the Hindoos have not attained any excellence in the art of making statues and busts, "although," as Dr. Forbes Royle very justly observes, "the opportunities are great of seeing the human figure as well at the ordinary occupations of life, as in their gymnastic schools, and they have had considerable employment in sculpturing the figures, though grotesque, of their gods and goddesses. Yet that they are capable of excelling in this as in many other arts, is evident from the admirable representations of the different castes and trades in the clay figures from Kishengurh in Bengal, as from Gokak, near Belgaum."

Although working in stone does not strictly come under the head of this subject, we must mention as worthy of notice the floating stone swans and fish which were sent by the Rajah of Johdpore. These were carved in the white marble of the country, and yet could swim on water, showing that the Hindoos are not ignorant of the buoyant effect of air when enclosed in a substance so much heavier than water.

On the wall space of that part of the Indian Collection which the artist has represented in the annexed Plate, were suspended cotton and silk carpets, and illustrations of Indian dresses manufactured by the natives. Although carpets seem more calculated to cover the floors of houses in cold and wet climates, yet their invention originated in eastern countries, where they are not so much used in doors, as to spread over the sandy and dusty earth in the open air under the shade of trees, where the native loves to sit. The Persians undoubtedly first employed what we call tapestry, although skins were used long before for similar purposes, and this was probably introduced into Turkey, and there manufactured into rugs and prayer-carpets for the Mahomedan to kneel on in his devotional exercises. The carpets of India are made of two materials, cotton and silk: the former are stout, serviceable, and handsome, and are made of all sizes. They are generally striped blue and red, but often other colours are used in squares or stars. It is a question of some interest whether our manufacturers at home might not make these carpets with profit to themselves for the bedrooms, &c., of the poorer classes: and whether they might not exhibit their skill in improving the designs, and exporting small carpets for individuals, and large ones for halls and tents, into all parts of the world, not excepting India itself.

A splendid specimen of a silk carpet was contributed by Maharajah Goolab Sing, and was described as being as remarkable for "variety in the pattern, brilliancy in the colouring, as well as pleasing harmony in the whole, as any in the Exhibition." In the great Tent which was pitched outside the Building, at the eastern end, was a large carpet which deserved attention from the fact of its having been manufactured by the reformed Thugs in the Government School of Industry.

The accompanying View gives a glimpse of the Transept, in which is seen a fountain in cast-iron, bronzed, the jet of which was formed by a group of "Cupid and the Swan," designed by Mr. John Bell: the figures occupied the centre of a tazza, ornamented with a decoration of the white and yellow water-lily. The fountain was cast by the Coalbrook Dale Company.

INDIA No. 2

WEST INDIES.

CONTRIBUTIONS for the Exhibition arrived from nine of the West India Islands, and as much interest is felt by many persons in the prosperity of these dependencies of Great Britain, a considerable amount of attention appeared generally to be given to the specimens which had been selected, as the best illustrations of their productions. With one exception, however, they all were very inadequately represented—the value of the whole collection not exceeding £300. Still it must be borne in mind that these contributions consisted almost exclusively of natural productions, of which only small specimens were sent, the manufactured articles being very few.

The exception was Trinidad, whose collection was one of much value and interest. From this Island there were a variety of specimens of pitch, some taken from the centre, and some from the shores of the Pitch Lake, which is the most singular natural phenomenon of Trinidad. It is about a mile and a half in circumference, and is nearly surrounded by volcanoes which vomit mud and clay. In the centre of the lake the pitch is soft, becoming gradually harder and colder as it approaches the sides. It is much used for pavement, not being suitable for other purposes, since it requires the admixture of a large quantity of oil. "The origin of the Great Pitch lake," says Mr. Robert Hunt, "has been the matter of much conjecture; by some it has been referred to volcanic action, by others to a decomposition of an anthracite bed. Be this as it may, the petroleum springs as they issue, yield a product containing a large quantity of volatile matter; as it flows down the lake in a plastic condition, towards the sea, it becomes less and less bituminous, and eventually nearly all that is left is an impure mass of carbon. This is the character of much that is sent to this country." The strong smell emitted from the lake, which is situated on the highest land in Trinidad, is sensible at a very considerable distance.

Tortoise-shell was exhibited as forming one of the articles of export. The shell of the turtle which is caught on the coasts of Trinidad and the Gulf of Paria, differs from all others from the fact of the scales overlapping one another like tiles on a roof. Among the agricultural products were specimens of sugar, shown by Mr. H. Warner, of this island, who is making strenuous endeavours to improve the quality of this staple product of the colony; woods for ornamental and other purposes, among which should be specially mentioned the tecoma, which is hard and durable, of a peculiar colour, and capable of receiving a fine polish; and lastly those beautiful seeds, originally introduced from the East Indies, which are used for beads of different kinds. Those commonly known as Job's Tears are the fruit of a tropical grass, called the *Coix lachryma*, and lustrous as pearls, are generally mixed with others of a brilliant red hue to form necklaces and bracelets.

The most remarkable of the contributions from the other West India Islands, were groups of tropical flowers, vegetable products and fruits, modelled in wax. Very considerable interest necessarily attached itself to them, as the plants were thus brought under the eye of those to whom they were unknown, in all the vividness of colour and the fulness of form which characterises them when freshly and luxuriantly growing in their native clime.

The accompanying view includes two stands which were covered with the products of the South Australian mines. They consisted of copper and stones of copper ore, chiefly from the Burra Burra mines, near Adelaide. Some of the specimens were very fine, the ore yielding generally from 30 per cent. to 70 per cent. of copper. These mines have been altogether very successful: they have been only worked since September 1845, and in 1850 had produced nearly 56,500 tons of metallic ore. They have been found to furnish also the carbonates of copper or malachites, which were so much admired in the Russian Department of the Exhibition. The Australian malachites have not yet, however, been very extensively used on so large a scale, being chiefly employed in small ornaments, and the more minute decorative purposes, the specimens obtained from these mines being more brittle than the Russian malachites used at the Imperial Copper Works at Perm.

In the back-ground has been introduced the rough wood carving of an Indian chief, intended for the figure-head of a ship, which was sent from New Brunswick, with the view of showing how greatly the art of ship-building has improved in the colonies in America.

It was close to this spot that originated, on May 8th, the only fire which occurred during the whole time the Exhibition was open to the public. It was caused by the over-heating of a draft-pipe attached to a gas stove in the office of Messrs. Fox, Henderson and Co., which ignited some papers in a box under the counter on which were displayed the New Zealand productions; it was instantly discovered and extinguished. When the awful consequences of a fire, or even an alarm of fire, among the crowds which have filled the building are considered, it invests this incident with a greater interest than would, under other circumstances, be due to it. All those who were on that day calmly wandering through the different avenues and passages should, indeed, feel grateful to the Royal Commission for having made the precautionary measures against fire so complete as to have prevented its spread, and thus averted a calamity which, by its effects, probably would have ranked with the most deplorable of the disasters of any age of the world.

COLONIAL PRODUCE

GUERNSEY AND JERSEY—MALTA AND CEYLON.

THE Channel Islands have been in the possession of Great Britain since the Conquest, and though the French have repeatedly tried to wrest these islands from us, which, by their proximity to the coast of France, seem to be their natural property, they have invariably failed. The trade of Guernsey is very inferior to that of Jersey, which has increased rapidly during the last fifty years, and its commercial relations, formerly confined to England and France, now extend to the chief countries of Europe, the West Indies, and South America.

An interesting and characteristic collection of articles was supplied by about fifty exhibitors. The Local Committee, which was formed there at an early date after the official announcement of the Exhibition, arranged a collection of the granites, which are quarried chiefly at Mount St. Mado in Jersey, and are very valuable; and Colonel Le Couteur sent specimens of some of the most approved varieties of wheat cultivated in the island. Among the manufactured articles from Jersey, two must be selected as most worthy of attention. Peter Jouhaud exhibited a "carriage gun," which could readily be taken to pieces and used as a rifle, a fowling-piece, or a pistol, while a secret spring in the lock prevented any accidental discharge: the barrel was curiously wrought and inlaid with gold and silver. The chiffonnière, or sideboard, by G. Le Feuvre, was carved in oak, having inside fittings of satin-wood, and the panels in tapestry, representing the emblems of England, Scotland, and Ireland: the back was formed by an elaborate carving, the subject being King John signing the Magna Charta.

The most important contributions from Guernsey were the raw silk, the produce of the island, and the samples illustrating the manufacture of iodine and hydriodate of potash. Experiments have been repeatedly made in England to introduce the culture of the silkworm, and though they have been attended with partial success, the climate of Great Britain has always proved the insuperable obstacle. In the Channel Islands, however, the introduction of the mulberry of the Philippine variety, which has been found best adapted for the food of the worms, would no doubt be attended with success, as there is seldom any frost in winter, and the climate is consequently very mild. The raw silk exhibited was the first sample obtained by the Guernsey Silk Growers' Company, lately established in the island, and was interesting, as attracting attention to an important and probably ultimately, a profitable direction for the outlay of capital. Iodine is extracted from the ashes of several varieties of the fuci and algæ, which grow abundantly on the north and west coasts of the Island of Guernsey. These marine plants, called "varecs," are first dried in the sun on the sea-shore, and then burnt in large trenches cut for the purpose. The fused mass, containing salts of soda in many varieties, is then broken into fragments, and washed; the result of a long evaporation is a deposit, which combines iodide of potassium with several other salts, and which must be chemically treated before a complete separation can be effected.

The Island of Malta was conferred in 1525 by the Emperor Charles V. on the Knights Hospitallers of St. John of Jerusalem, who had a short time previously been expelled from Rhodes, and remained in their hands until 1798, when the treachery of the French knights rendered its capture by a fleet from their own country comparatively easy, and the Order of Malta was then virtually extinguished. The English took possession of Valetta in 1800, and have since retained it by virtue of the treaty of Paris, in 1814, by which it was definitely annexed to the crown of Great Britain.

The local manufactures of Malta were represented by thirty-four exhibitors, the only specimens of raw material sent being some pieces of Maltese stone oiled for pavement and in their natural state, and some samples of cotton and silk of native production. The most prominent part of the collection was, however, formed by the vases sculptured in Maltese stone, which is of a rich cream colour, and being soft, is easily carved. As it is not susceptible of polish, and would soon yield to the influence of the moisture of the atmosphere, it is unfit for external decoration. The carvers of Valetta have long been celebrated for their works, and those in the Exhibition, in various styles, but chiefly after the antique, were all beautifully executed, and evinced great softness of finish and very tasteful design.

From the Exhibition the Island of Malta has obtained a prize of far greater value than the medals conferred by the juries; for, in consequence of his numerous services, and especially for those rendered while he acted as

Chairman of the Executive Committee, Sir William Reid was sent out, when the Building closed, as the Governor of Malta. His whole career has been one of benevolence and usefulness, evidences of which are chiefly to be found in the field where he was most able to exercise them—in the Island of Bermuda, where he represented his sovereign for many years, and where he is still remembered as the "Good Governor."

Before leaving the Mediterranean, a glance must be bestowed on the contributions of certain individuals, who kindly came forward and offered to exhibit such articles as they had in their possession, in order to represent the manufactures of the Ionian Islands. We are told that, owing to some misapprehension, the Ionians were without knowledge of the objects and purports of the Exhibition of 1851, until it was too late to provide articles fit for display. Madame Mavrojanni exhibited an apron of crochet-work, remarkable for the beauty of the pattern and execution. These aprons are the ordinary work of the peasant girls of Corfu, and are always worn by them. It is a curious fact, that the crochet-work, which has recently appeared in England as an accomplishment, has been for ages the every-day work of the Ionian peasant girls.

Lord Seaton sent, amongst a variety of contributions, a large silver brooch of elegant and curious design, and of the finest workmanship, combining in the centre the Lion and Crown of England, as a large medallion, with seven medallions, containing the arms and emblems of the seven islands, depending from it.

The Island of Ceylon, though in such close proximity to the continent of India, does not form any part of the dominions of the East India Company, but is in direct dependence on the Crown of England. Ceylon was not fairly represented in the Exhibition, as there was scarcely anything furnished in the art for which the natives have been justly celebrated—that of carving in wood and ivory. To ensure the arrival in London of the goods by the prescribed time, only six months could be granted for the production of articles which required at least a year, as it is quite impossible to persuade a Cingalese carver to work faster than is his custom: he will not depart from long-established usage.

A curious sample of Arack, a spirit distilled from the sweet juice of the cocoa-nut tree, called "toddy," was exhibited: it had been upwards of thirty years in bottle, and came originally from the cellar of the last Dutch Governor of Ceylon. Arack is well known in England as forming the chief ingredient of *Vauxhall punch*: it is said, however, that this "Vauxhall nectar" is a mock arack, made by dissolving flowers of benzoin in pale Jamaica rum.

GUERNSEY AND JERSEY MALTA AND CEYLON

CANADA.

It was impossible for any of our fellow-countrymen to wander, without pride and gratification, into the space devoted to the display of the productions of the English possessions in North America; at the same time, they were impressed with an awful sense of the power and responsibility of England in ruling, and in having ruled, for nearly a century, so immense a tract of land, peopled by emigrants from many parts of Europe, not more than one-sixth being her own legitimate subjects. In the Eastern province, or Lower Canada, the inhabitants are chiefly French, and are now almost as much a distinct people as they were at the time that Canada was ceded by France to Great Britain. There is hardly any communication between the English colonists and *La Nation Canadienne;* a deep-rooted antipathy appears to subsist in many parts between them, and the tranquillity of the colony is, from time to time, disturbed by the efforts of the one race to gain the ascendancy over the other.

Canada boldly and promptly answered the summons which England put forth, and, from the comparative proximity of the colony to the mother country, it was more fully represented in the Exhibition than any other of our possessions, with the exception of India, the value of the natural and manufactured produce sent over, being nearly £2,500. Canada is strictly an agricultural country, three-fourths of its inhabitants, on the lowest computation, being engaged in farming operations. But, as a science, agriculture is almost unknown; no method or definite system is pursued in husbandry, and, though the soil is eminently fertile, the produce is generally inferior to that of more favoured climates.

The late Geological Survey, under the superintendence of W. E. Logan, Esq., has been the means of pointing out the mineral wealth of the colony. From his report, it appears that the country abounds in the ores of iron, and, in many parts, copper, silver, and lead, have been found to exist. Gold has been discovered in several localities, and specimens were exhibited from the workings of the Chaudière Mining Company weighing from a few grains up to a quarter of a pound. However, the precious metal has not been found in sufficient quantities to render the search for it desirable, in comparison with that for other metallic ores.

In the commerce of Canada, the exportations of timber form no inconsiderable item. The numerous forests abound in many kinds of the most valuable trees, but it is chiefly the white and red pine which is sent to England, the United States, and other parts of the world. In the main avenue, immediately opposite Canada, was erected a kind of trophy formed of planks cut from the trees, which grow in such luxuriant abundance. It may be seen on the left, or north side of the accompanying view.

The manufactured articles sent to the Exhibition from Canada showed that the inhabitants, in general, pay more attention to the useful than to the ornamental; and it was somewhat curious to see the mixture of the works of a savage population with the clearest evidences of English civilization. The canoe which was slung up between the two galleries was one of the largest class used, and calculated to hold a crew of twenty men, with their stock of provisions and necessaries. It was made from the bark of the white birch, and was so light that it could be carried with ease by its crew, to avoid the falls and rapids which occur so frequently in the American rivers. The sleighs exhibited were very light and elegant, and of two kinds—the single and the double. They are generally drawn by four horses, who madly gallop at full speed over the ice and frozen snow, urged by their drivers, who, wrapped in the warmest furs, participate in their exhilaration and excitement, which a pure air and brilliant sky cannot fail to produce, even though the thermometer be thirty degrees below freezing point.

The fire-engine, which occupied a large space nearly in the centre of the Canadian department, was very ingeniously constructed, and could throw a jet of water to a height of 180 feet, only requiring from twenty to thirty men to work it.

Lastly, as an illustration of the beauty and aptness of the native woods for cabinet-work, six chairs, elaborately carved in the style of the fourteenth century, the coverings of which were worked by the ladies of Montreal, were sent over and exhibited previous to being presented to Her Majesty.

CANADA.

Dickinson Bros 114 New Bond Street

MEDIÆVAL COURT.

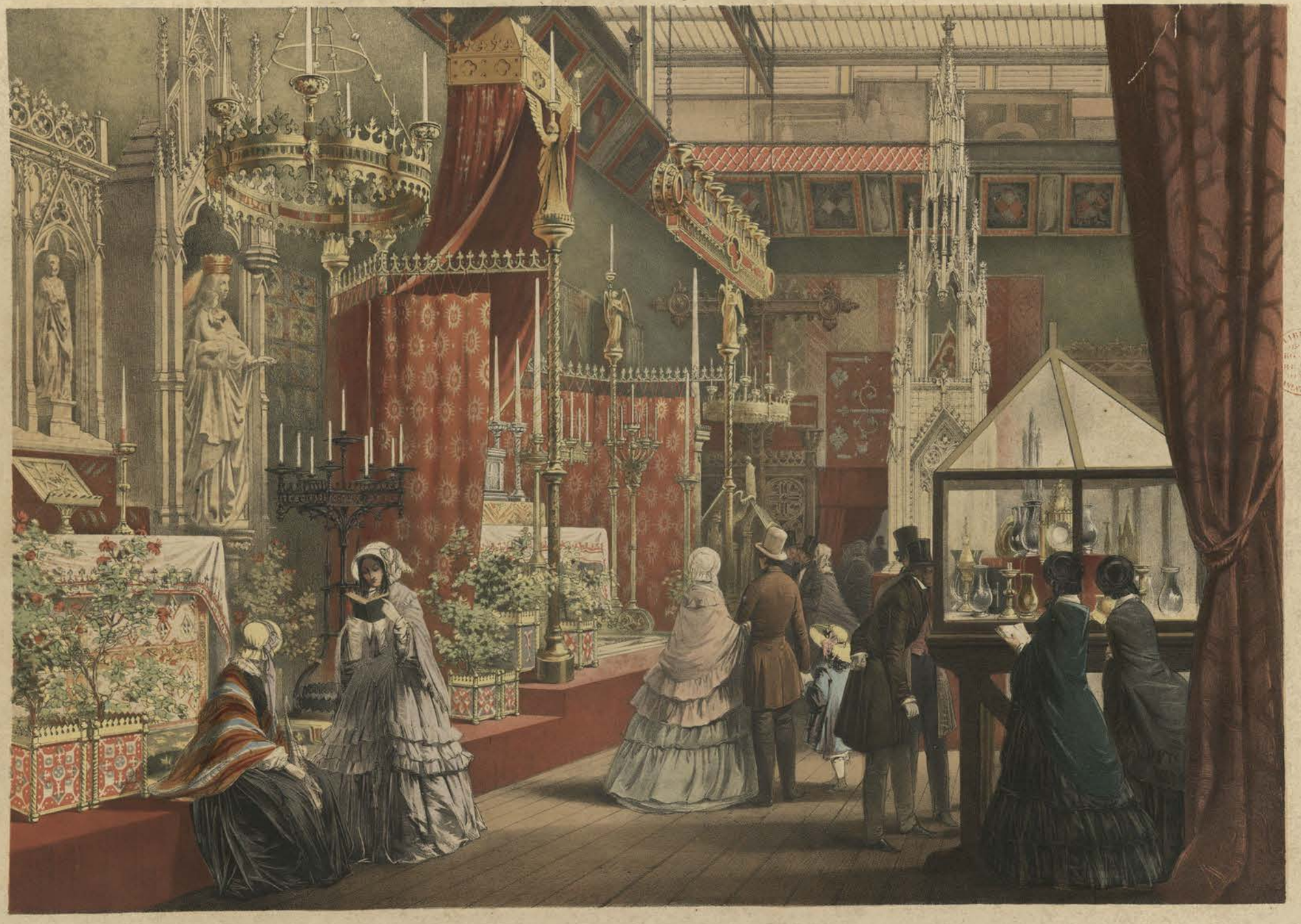
THE exhibitors who contributed their several productions to form the Mediæval Court had in view the illustration of a style of decoration now almost totally neglected, except in Roman Catholic churches; and well was their design carried out. On his entrance, the visitor was struck with the awe which is so often felt in a sanctuary: the place was, as it were, set apart from the rest of the Exhibition, looking dark and solemn, for the display of the taste and art of dead men; and, indeed, when a comparison was attempted with the things without, the mind was not always able to award the higher praise to the latter. Several gentlemen undertook to make a selection of the most eligible of the contributions offered, and to superintend the arrangement of the space placed at their disposal by the Royal Commissioners, which could not exceed 2,304 superficial feet (to include both passages and exhibiting space), and the ornaments were therefore unavoidably much crowded together.

The accompanying view was taken so as to embrace the contributions of as many of the exhibitors as possible, several of which deserve particular notice. On the eastern side were placed some of the most beautiful specimens of stone and wood carving to be met with in the whole Exhibition, by Mr. G. Myers, of Lambeth. His sculptured Font in Caen stone was raised on three traceried steps, and in the panels round the bowl were bas-reliefs representing the Fall of Man, St. John Preaching in the Wilderness, the Baptism of Christ, and the Crucifixion; while around the base were effigies of St. Mary, St. John, St. Peter, St. Paul, and the four Evangelists. The cover was richly carved in oak, the niches being filled with figures of angels in the attitude of prayer. When the Font was required to be used, the cover was so arranged as to slide upwards in the canopy above it, the height of the whole being about 28 feet.

Mr. Myers also exhibited a sculptured Tabernacle, with richly carved gablets, niches, and flying buttresses, surmounted by angels bearing musical instruments, and also a canopied niche, in which stood a statue of the Virgin and Child. Quite in the background is seen a large Rood Cross, carved in oak, and of very peculiar workmanship. The whole surface of the arms and support of the Cross was entirely covered by a rich network of tracery, fleur-de-lis, and other ornaments. This was also one of Mr. Myers's contributions.

On the northern side of the Mediæval Court stood a large Stove in Terra Cotta (literally *baked clay*), which was exhibited by Messrs. Minton and Co., of Stoke-upon-Trent. The important difference which distinguished this from the common German stoves was, that the pieces or tiles of which it was composed were made by the compression of clay in the dry powdered state. This process was invented and patented by Mr. Richard Prosser, of Birmingham, and has been applied to various purposes of an useful nature, in addition to the stove under notice. The Gothic designs of these Tiles were by Mr. A. W. Pugin, and they are enamelled in the style of Lucca della Robia, which is perfectly novel in this country, and, indeed, has not been elsewhere attempted since the 16th century, until it was revived by Mr. Minton in the decoration of these tiles, friezes, garden-vases, &c., for the Great Exhibition. Stoves of this description emit great warmth, without producing the dryness so often complained of in iron stoves.

Mr. Minton has been occupied for many years in bringing to perfection those Encaustic Tiles which excite such well-merited admiration. With great zeal and unflagging perseverance he collected and improved the old designs of Mediæval times, and has now enlisted the first talent of the day in the production of new ones. Notwithstanding the success which has attended his efforts, Mr. Minton is not yet contented; his interest in the subject remains unabated; improvements are constantly being made, new colours being employed; and now any special design an architect may desire can be produced. The tiles have been used by Mr. Barry in the new Palace at Westminster; and some very beautiful specimens have been laid down in the great central hall at the entrance of the House of Commons. The tiles for walls, which Messrs. Minton also contributed to the Mediæval Court, are ornamented by a patent process of printing from the surface, by which several colours may be transferred at one operation. The process is likely to come into extensive use, and has been already applied to the decoration of pottery in general; tiles thus ornamented have been ordered for the smoking-room of the House of Commons, and have been much used for the fireplaces in other parts of the new Palace. Specimens of them were exhibited as forming the pans of flower-pots, the gilt iron frames of which were furnished by Messrs. Hardman, of Birmingham. These latter gentlemen also sent some very valuable contributions to the Mediæval Court, consisting of church-plate and ornamental brass-work; while the greater part of the decorations and furniture were supplied by Mr. J. G. Crace, of Wigmore Street, and Messrs. Pugin, with whom originated the idea of collecting together these specimens of Mediæval Art.



MEDIÆVAL COURT

PAINTED GLASS.

THE art of painting and staining glass is undoubtedly very ancient, being, in the first instance, directed only to the production of a design resulting from the separation of different colours by metallic lines. Soon, however, it was discovered how greatly the effect could be increased by the addition of mere black lines drawn on the glass, and fixed by the action of heat, so as to render them unchangeable, and from this point, the art advanced step by step towards that perfection which it attained in the twelfth and thirteenth centuries, and which men have since vainly endeavoured to equal.

The great difference between the painted glass of the present day and that produced four hundred years ago, appears to be that the former requires a close inspection before its real beauties are ascertained, every part taken singly being beautiful in itself, but the effect of the whole not being such as this examination would lead you to anticipate; while the latter, notwithstanding its great imperfections and quaintness of design, invariably succeeds in expressing the action and the sentiment of the subject it represents. With fewer colours than are possessed by the artist of the nineteenth century, the old painters on glass produced beautiful and harmonious results, which have never since been equalled, and it was consequently thought that the cause lay in the better quality of their colours; but the real secret which has not yet been discovered, is the artistic arrangement, contrast, and combination of the different shades. These mellow tones and harmonious effects have certainly been increased by the finger of time, which has softened certain hues, and as it were, blended the whole; and the faithful imitators of the mediæval designs have not failed to find a means of copying these peculiarities. Such a process is evidently invaluable when it is requisite to repair old stained glass, and to replace broken portions of it; but if glass is produced to-day, having that appearance of age, a few years will suffice to overdo the effect, and render the painting gloomily obscure.

In England, the art declined after the Reformation, which gave birth to ideas little in favour of the application of painted glass to the decoration of churches, and was almost entirely confined to the production of plain borders and rosettes, which were used for the windows of the halls and libraries of private houses. Though long dormant, it was never extinct, and has since revived so rapidly that it seems no element is wanting to throw a brilliant lustre on the achievements of any artist, provided he combine in his own person two gifts—he must be a good glass manufacturer, and a skilful designer.

In the north-east gallery of the Building were exhibited the specimens of stained glass of all nations. The transparent roof was darkened, and the whole space enclosed with heavy drapery, so as to only admit the light from the north side, against which had been placed the panels, windows, &c., arranged in the order of the countries which produced them.

Among the French artists entitled to particular notice, must be mentioned Messrs. Maréchal and Gugnon, of Metz, who exhibited two works of very great merit: the famous portrait of the Burgomaster, was one of the finest paintings on glass ever produced, while the imitation of the glass-work of the sixteenth century, in St. Charles administering the Sacrament to the Plague-stricken, was a subject treated with a masterly hand: it may be contended, however, that in the latter it was the magnificent painting which excited admiration, and that the work was not produced under those conditions which are inherent to the true manufacture of stained glass.

Monsieur Prosper Lafaye, of Paris, exhibited a window, the upper part of which was in imitation of the mosaic paintings of the thirteenth century, and produced a beautiful effect: in the centre was a scriptural group in a later style, and which might perhaps be objected to on account of the too great finish of the figures; but it was evident that M. Lafaye was a talented artist, and felt unwilling to confine himself to mere outline.

Not far from these, Mr. G. Baillie, of London, exhibited an original historical picture, enamelled on glass, representing Shakespeare reading a Play to Queen Elizabeth and her Court. The merit of the execution of this work lay both in the general harmony of the whole, and also in the perfect success attained in the representation of the velvet and other materials of which the dresses were composed. The only fault was, that to be properly seen, the painting required the concentration of all the available light behind it, leaving the spectator in perfect obscurity.

Messrs. Chance, Brothers, & Co., of Birmingham (the firm which alone produced, in addition to their ordinary business, the four hundred tons of glass, requisite for covering the whole surface of the Building), exhibited numerous specimens of ornamental work in different styles, among which should be noticed the decorations prepared for the Church at Leamington, which resembled those of the thirteenth century, without, however, descending to copies of

them. Close to them was a window composed of national emblems, designed by Luke Limner, and executed by the St. Helen's Plate Glass Company, exhibited mostly with the view of showing to architects the extent to which they could colour plates of glass. The window was executed in a single piece, and was an illustration on the largest scale of the successful application of design by heat to glass.

It is impossible to enter into details respecting the whole of the numerous English and foreign exhibitors in this Class, who certainly, by their fine works, proclaimed a revival of the art—the modern character of which they did much to redeem; but on leaving the gallery, and entering the main avenue, we find ourselves immediately opposite the immense work of Bertini, of Milan, which requires some notice. In the Official Catalogue, it was called "Dante, and some of his Ideas." Dante was made to occupy the centre of a large painted window, and was represented in one of his forlorn moods, as if he had just then passed the threshold of hell, and had himself relinquished "all hope"—or, as if he was composing in exile his laconic epitaph:

"Hic claudor Dantes, patriis extorris ab oris."

Though there was much merit in this work, the fine effect produced was mainly attributable to the complete obscurity which surrounded the spectators. It had too much of the character of a painting about it, requiring thereby the use of very large pieces of coloured glass in its manufacture—many of which had been broken, and the fractures were very distinct in several parts.

CLAUDET & HOUGHTON

AGRICULTURAL IMPLEMENTS.

AMONG the Agricultural Implements in the Great Exhibition were to be found numerous specimens of those which were used by our most advanced agriculturists, as well as some new appliances, for the first time introduced to the notice of the public. The Exhibition was no novelty to the agricultural implement makers, who have long been accustomed to periodical displays of this branch of mechanical adaptation, under the patronage of the Royal Agricultural Society: and they had but little to fear from the rivalry of foreign nations; for, although considerable merit was observable in the contributions from the United States of America and from Belgium, they all had one strong family likeness, that of being remarkably heavy, while the English manufacturers have ever had in view to reduce the weight, as much as they were able, without impairing the solidity and strength of the implements.

The most remarkable feature in the agricultural operations of the present day, is undoubtedly the rapid introduction and use of small portable steam engines for agricultural purposes, especially noticeable in connection with the combined thrashing, straw shaking and dressing machines, unknown until within the last two years, on account of the non-efficiency of "horse-power" application to the working of such apparatus. Machines of this description are now made so efficient, that with a six horse-power engine, a farmer may thrash in the open field, if required, two large stacks in a day, at considerably less cost per quarter than by any other means. Thrashing, separating the straw and the chaff from the grain, and dressing the grain itself, can now be performed all in one operation and with a considerable diminution of labour; and therefore these machines are becoming more and more appreciated by farmers, who are in earnest seeking after all such means as can be adopted to diminish the cost of production.

Although it is difficult to select from the number of curious looking machines, which were crowded into the space devoted to the display of Agricultural Implements, any special one more worthy of attention than another, yet it would seem an important omission if the various improvements shown to have been effected in the manufacture of that most ancient of all machines—the plough—were to be overlooked. Notwithstanding that Pliny considered the original machine used by the Egyptians, the Greeks, the Etruscans, and the Romans as perfect, and looked with contempt upon all efforts to improve its construction, experience has taught the farmer that even his own plough, combining the improvements of a Jefferson in America, a Duhamel de Monceau in France, an Arbuthnot in England, and of many others in almost every country of the earth, is yet open to a charge of imperfection.

This was apparent when the trial of the ploughs exhibited took place before the Jury at Pusey: those which worked best in small depths were not those which gave the most satisfactory results when put to work at an extra depth. It appears, therefore, that it is to the form of the share and furrow-turner that most attention is now requisite, with a view to their adaptation to soils of varying tenacities and degrees of resistance. After the most severe tests, the two or four horse plough exhibited by Mr. William Busby showed its superiority over the others; it is right, however, to observe, that this exhibitor had applied to his plough the moveable nose-piece, invented by Messrs. Ransomes and May, the eminent firm of Ipswich, who are indefatigable in their attempts to bring to perfection every machine employed in agricultural pursuits. Moreover, the judges considered the working of the ploughs shown by Mr. Ball and Messrs. Howard very satisfactory.

Since the introduction of Sherwood's patent metal mills, which are well adapted for grinding agricultural produce, farmers are turning their attention to the advantage to be derived from grinding for themselves, instead of sending to the millers such materials as they require for their own use. Messrs. Ransomes and May, mentioned above, are the only makers of these mills, which carried off a prize at the Great Exhibition, and several others since then, at local Agricultural Shows, in various parts of the Kingdom.

The success which attended the trials of Mr. McCormick's Reaping Machine has convinced English farmers that it can be economically employed; it is therefore probable that, within a very short time, similar implements, or some improvement on the American invention will be very generally used throughout the country. In Agriculture, it appears that the machine will be as important as the spinning-jenny and power-loom in manufactures.

Steam-ploughing must be the next great step in agricultural operations, but at present there are no practical means of attaining the end in view.

AGRICULTURE.

Published by Day & Son, 164 New Bond Street.

SHEFFIELD HARDWARE.

SHEFFIELD may well be termed the Metropolis of the manufacturers of articles in steel; in the particular department to which her productions are chiefly confined she stands pre-eminent, and many times were her sons gratified by hearing the well merited praise which the magnificent display of hardware called forth, lavished by the foreign visitors, upon the tasteful and well designed grates, the admirable cutlery, and the brilliant plated goods. "Your countrymen," said a French gentleman, "are proud of all this variety, this richness; I would fain exclaim '*what cheapness;*' but the English have now so long known the advantages of Free trade, that they forget to utter that cry with me. Would that it re-echoed from east to west, and from north to south in France, for if once our manufacturers could procure iron and steel at more reasonable prices, we should be able to do as well as you. O, that the French Government would not close its eyes to that which this very exhibition demonstrates so clearly—that nothing will be wanting to establish the superiority of our manufactures from that day, when Industry being released from the charge which presses so hardly upon her, under the colour of protection, she will be allowed to exercise her powers with full freedom, without submitting to grievous burdens which retard her progress, and without imposing any such herself."

In the beginning of the seventeenth century, Sheffield was little more than a large village; now it displays all the features of a manufacturing town of the first importance. The contrast between the town itself and the surrounding country is very great: the smoke arising from the numerous forges, steam-engines, and factories, gives a dingy mean appearance to the houses, while all around, the beautiful scenery is diversified by the handsome villas of the opulent merchants and manufacturers, and from a distant view the spectator conceives only that he is gazing upon a very lovely spot. And so it was with the gorgeous splendour which dazzled the visitor to the Palace of Industry; few could distinguish beneath it the ghastly misery which lay there gilded over and hidden. The Exhibition was glorious, but how much of that glory was shared by the workman, pale with sickness and grim with want? When admiring an exquisite piece of cutlery or a chastely carved design, how many thought of the dreariness of our manufacturing districts to those who are compelled to eke out their living there, where everything is dingy—the streets, commerce and morality, —where a thousand chimneys incessantly throw up their soot against the skies, to fall back, darken the atmosphere, and begrime the human wretchedness compelled to move in it,—where the brightest and most beautiful productions contrast strangely with the haggard and consumptive producers,—where the rich spinner weaves into his stuffs the hopes, affections and longings of the workman,—and where the ministers of religion preach no other gospel to the poor man than from that melancholy text, "In whatsoever state it has pleased God to call you, be ye therewith content."—Oh! this is a sad picture, and to those who are willing to gaze on it, it may teach many a useful lesson, and especially, it may induce us sometimes to consider how and by whom, and at what cost of human hopes and heart yearnings, the wonders we admire were produced.

The commercial importance of Sheffield industry is known in every part of the world where English goods penetrate, and it would be difficult to enumerate all the various articles manufactured in this busy town, made principally of steel, which were represented in the Hardware Department of the Great Exhibition. We may especially mention two of those firms whose stands are the most prominent in the accompanying plate, and who proved that the manufacture of drawing-room and other grates and fenders, and decorated stoves, is in a most promising condition in respect to advancement in tasteful design. Messrs. Stuart and Smith contributed specimens of Sylvester's patent grates, which were meritorious as for novelty of principle, design and workmanship. The distinguishing character of Sylvester's plan is that the combustion takes place on a metal plate which is not raised above the surface of the floor, thus obviating an objection very generally expressed against the grates of modern construction, which are placed so high as to leave the feet of the occupants of the room in a cold stratum of air. Messrs. Hoole and Robson's grates had less burnished surfaces than those just mentioned, and they deserved great credit for substituting for them castings in the state in which they leave the mould: these contrasted beautifully with the brass ornaments, and prevented the charge which was sometimes brought against Messrs. Stuart's productions, that they were too fine for use, from being applied to the goods of Messrs. Hoole and Robson.

SHEFFIELD HARDWARE.

HARDWARE.

THE space devoted to articles of Hardware in the Great Exhibition was occupied by an exceedingly miscellaneous collection, for it was found very difficult to limit the range of Class XXII to objects of an entirely distinct nature; for, on the one hand, it was intimately associated with Class I, as representing the results of human labour exercised upon mineral productions, and, on the other, in the cases of metallic sculpture, its identity with Class XXX rendered the task of defining the limits between ornamental art and fine art, by no means easy. When the Jurors commenced their scrutiny of the articles classed under the general head of Hardware, they accordingly laid down the following rules, which we will also take as our guide in bringing into notice the objects most deserving of attention, and which were selected as the most appropriate to form the subject of the accompanying plate: "The objects comprehended in Class XXII, may be divided into those intended to supply the necessary and absolute requirements of large industrial populations, and generally to minister to the conveniences of society; and those which, either partially or wholly are created to meet the demands of taste and refinement among the wealthier classes of the community."

It is a curious fact that the greater part of the articles commonly manufactured at Birmingham, are not the production of large factories, where extensive machinery has been erected at an enormous expenditure of capital. Nearly all the small wares are made by workmen who, each in his particular line, undertake to execute the orders which they have received from the agents in the town who are in correspondence with the great wholesale establishments which are to be met with in every part of the United Kingdom. In Birmingham there are numerous buildings containing a large number of rooms of various sizes, each of which is furnished with a lathe, benches, tools, and all the other requirements and conveniences as are suited to the various branches of manufacture for which the rooms are intended to be used: a steam-engine on the ground floor is connected by working shafts with the machinery placed in each workshop, and can when needed set the whole or any particular part in motion. When a workman receives an order which he calculates will take him a week or a month to execute, he hires for that period one or more of the apartments containing the conveniences which he requires, stipulating for the use of a certain amount of steam power. In this manner he realizes all the advantages which he would enjoy by the possession of a steam engine of his own, and as there is a great competition between the several owners of these buildings, the charge for the accommodation of a workman has been brought very low.

There are, however, many extensive establishments in Birmingham which employ a large number of workmen of their own, and which contributed some very fine specimens of their manufacture to the Exhibition. Messrs. Winfield's collection was remarkable for variety and novelty: their plain and ornamental tubes, which are applied in so many ways for domestic purposes, differed from all others in the manner in which they were produced; their application of glass in the form of blossoms, leaves and fruit, to stamped brass-foundry, and particularly to upholstery decorations, was highly artistic and original; but perhaps nothing was entitled to greater commendation than their patent metallic bedsteads, richly and elegantly ornamented. These bedsteads are fast superseding those of wood, and are so portable that the possessor of one of them may literally "take up his bed and walk." The finest display of metallic manufactures in the whole of this class was perhaps made by Messrs. Messenger and Sons, whose establishment is one of the oldest in the trade in Birmingham, having been in existence upwards of fifty years. These gentlemen recognised at an early period the importance of the union of art with manufactures, and it is to the skill of a Flaxman and a Chantrey that are due many of the beautifully designed objects which were produced in the workshops of Messrs. Messenger. On their stall were to be seen groups of the Queen and the Prince of Wales, in bronze and or-molu, beautifully modelled by John Bell, a bronze statuette of the Duke of Wellington on his charger, and a portion of a chandelier in bronze, designed by Grüner for the pavilion in the gardens of Buckingham palace, which was remarkable both for the quality of the metal and the high finish of the work.

Although not belonging to Class XXII, we must not omit to mention the collection of very beautiful papier-maché furniture exhibited by Messrs. Jennens and Bettridge, which the Artist has introduced into the view of the Hardware Department, with which it was in close proximity. Among the many inventions of modern times for diffusing the luxurious elegancies, and even the conveniences of life, there are few which have greater claims on our admiration than papier-maché, and its now very general application is the result of experiments made within the last fifteen or twenty years, and which are principally due, we believe, to Messrs. Jennens and Bettridge. Articles in papier-maché are manufactured in two different ways; by pasting paper in sheets upon models, and by pressing in dies, numerous sheets of paper reduced to a pulpy state. The former process produces articles of a better quality than the latter, but many causes conduce to render them very much more expensive.

HARDWARE.

Dickinson Bros' 114 New Bond Street

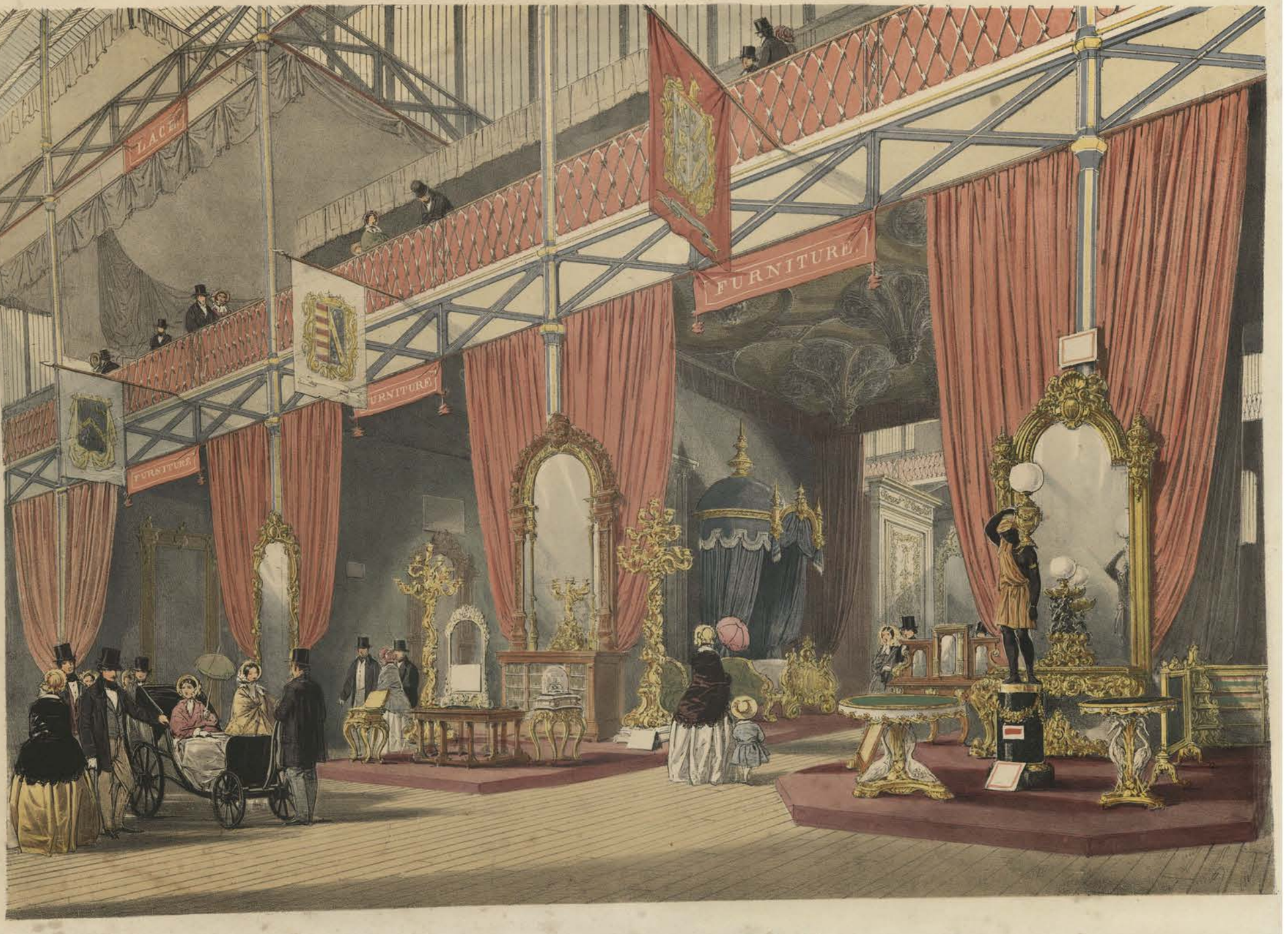
FURNITURE.

It would have been difficult to select any department of the Great Exhibition which could compare with Class XXVI, as an evidence of our national prosperity. The contributions to this section included every species of decoration, for churches, for palaces and for private dwellings, upholstery and paper-hangings, japanned goods and papier-maché, and while exhibiting the taste and skill of the workman, they displayed no less distinctly the wealth and domestic refinement of those classes of the community for whose use, comfort or luxury the greater part of the articles were manufactured. Here, was a chair low, warm and soft, constructed so as to afford the largest possible amount of repose to the limbs of the ponderer, while his mind was actively engaged on his own state, or on the destiny of others, thus unquestionably materialising the idea of the poet who believed that nothing was so conducive to beautiful and true thought, as a fit place in which to think: there, was a *causeuse* temptingly opening its arms, and offering every facility for carrying on a nascent flirtation in its doubly-luxurious lap: on every side, in short, was some article of furniture, a beautifully decorated state bed, a brightly polished dining-room table suggesting the most convivial ideas, or a tastefully carved buffet, well meriting a close inspection. Still this magnificent display gave birth to one legitimate regret, that amidst all the ornamental works in furniture, collected at the Exhibition, there were to be found so few specimens of ordinary furniture for general use; for of course a great number of the articles having had unlimited labour lavished upon them, called for such extravagant prices as few have the means of paying, and everybody felt that it would be very desirable to expend some taste in the manufacture of those more ordinary objects which are daily used by the middle class of society.

Several of the beds united all the requisites of finished pieces of furniture; they were light and elegant, and certainly very attractive. Among the contributions of Messrs. Jackson and Graham was a sideboard of English oak in the *renaissance* style, the pilasters of which were formed by figures representing hunting and fishing, summer and autumn, and which was certainly one of the most admirable contributions of the kind in the class: it was hardly even surpassed by the Kenilworth Buffet, by Messrs. Cookes and Son, of Warwick, which was considered worthy of a place in the Fine Art Court, and ranked as a specimen of sculpture in wood. The origin of this latter piece of furniture, on which was carved the story of Amy Robsart and the Earl of Leicester, has been described as follows: "In the month of April, 1842, a colossal oak tree, which grew near Kenilworth Castle in Warwickshire, measuring about 11 feet in diameter, and containing about 600 cubic feet of wood, was levelled, and afterwards purchased by the exhibitors, who, at the period of Prince Albert's happy conception of a grand industrial competition, resolved upon creating from the fallen tree a monument upon which the skill and ingenuity of our native wood-carvers should be fairly developed. Impressed with this patriotic desire, and regardless of expense, anxiety and toil, the projectors of the Kenilworth Buffet, with commendable taste, devoted the tree, which for long ages had stood near the famous castle of Kenilworth, to recal to future times the memorable events that had transpired within its walls. Fiction with its most enticing charms contributed, poetry and romance, such as the genius of Sir Walter Scott could alone evoke, blended with history, offered materials for a work of art, such as few subjects could equal. Accordingly, the Kenilworth pageant of 1575, in honor of Queen Elizabeth's visit to the Earl of Leicester, so quaintly described by Laneham and Gascoigne, two attendants on the Queen in this 'Royal progress,' and so vividly reproduced by Scott, was resolved upon, and the result was before the world at the Exhibition of 1851."

Those who wish to recal to memory this rich and elaborate piece of carving will find the Elizabethan Buffet minutely described in the Official Catalogue, but there was one important feature connected with the beauty and accuracy of this production which deserves special notice. Mr. Walter Cooper introduced most satisfactorily the application of what sculptors call *pointing*, which had never before been successfully carried out in wood-carving: by this process the workman was enabled to copy the plaster models of the designer with far greater nicety, than could have been attained by any other means.

The contributions from the continent in this branch of industry were singularly rich and diversified, but an examination of the decorated furniture by our own manufacturers, established beyond contradiction the fact, that not only for truthfulness of execution, but in many instances for beauty of design and superior quality of the material they stood pre-eminent, when compared with foreign productions.



FURNITURE

WOOLLENS.

THE importance attached to the woollen manufactures of this country, is proved by the stringency of the measures that were formerly taken by guilds of merchant tailors and woolstaplers, in directing its operations, and the earlier records on this subject, present a most disgraceful picture of the now exploded fallacies by which the restrictive policy of our legislators attempted to support certain trades. These exist no longer, and in the Crystal Palace the manufacturers of Great Britain exhibited to the gaze of all the assembled nations of the earth, our oldest and our most recently introduced fabrics; each one of which had its own peculiar excellencies, and for the production of which thousands of workmen are now employed, under an extended system, which has sprung from that freedom of thought and action, which has been the characteristic of the industrial communities of modern times, in contradistinction to the despicable exclusiveness of an epoch now happily for ever passed away.

We cannot, perhaps, do better than give an outline of the process by which a fleece is wrought into a piece of cloth, of which there were so many admirable specimens in the Woollen department of the Great Exhibition. After having been cleansed from marks and stains, the wool is put into the hands of the wool-comber, who with an iron-spiked comb, the invention of which is attributed to St. Blaise, draws out the fibres and brings them into a state fit for the spinner. The latter forms the wool into threads, which are more or less twisted, according to the manufacture for which they are designed: the more twisted forming *worsted*, the looser *yarn*. The kinds of stuff made wholly or partly of wool are extremely various, and it is perhaps impossible to surpass the English broad-cloth with respect either to beauty or utility. The threads in it are so concealed by a fine nap or down raised on the surface and curiously smoothed or glossed, that the fabric looks more like a rich texture of nature's forming than the work of a weaver. Wool, in common with other animal substances, takes a dye better than any vegetable matters, and the cloths are therefore made of every possible hue; but, in order to fit them for the dyer, it is necessary to free them from all foulness and greasiness, which is by no means an easy operation. It is effected by a process called *fulling*, in which the cloths are beaten by heavy mallets as they lie in water, with which a quantity of fuller's earth has been mixed, and which unites with the greasy matter and renders it soluble in water: the operation of fulling has the further effect of thickening the cloth and rendering it more firm and compact, by mixing the threads with each other, something in the manner of a felt.

In the annexed view of the Woollen department the artist has introduced the stall of Messrs. Brett, Brothers, and the case of Mr. J. T. Clay. Mr. Henry Brett was appointed a juror, and the firm was thereby disqualified from receiving any special mark of approval from the jury of Classes XII and XV, but we cannot pass over the goods they exhibited, which were principally adapted for general consumption in this country, and yet were suitable for the Colonies and the United States, without remarking the introduction which they made of a new fabric, for which there has since been a considerable demand. They called it the "Clouded or Wove Doeskin," and thus describe the process of manufacture. The yarns are first dyed the colour required, then put into hanks, and the part which is to retain the original colour placed in a block and closely screwed down, and the whole is then immersed in the dye vat;—the parts projecting beyond the block take the new colour required, and the two distinct colours thus produce the effect of a clouded doeskin.

The woollen trade of Great Britain was established in the reign of Edward the Third, in the year 1336, and has continued in the same districts where it appears to have been first located: the principal of which are the West of England, (Gloucestershire, Somersetshire and Wiltshire), which claim the precedence in many respects, and the West Riding of Yorkshire, where the manufactures carried on at each town have their own peculiar characteristics: thus, Leeds is remarkable for its woollen products; Bradford is celebrated for its worsted fabrics, introduced by the Flemish weavers, whom the cruel persecutions of the Duke of Alva in 1570 drove to seek for refuge in this country; and Halifax stands unrivalled in the artistic elements which characterise all its productions.

The revolving lighthouse in the Nave was exhibited by Messrs. Chance. To resist the prolonged action of the atmosphere, the glass was made of as hard and unalterable a nature as possible, but the exhibitors then could only accomplish this object at the expense of the colour of the glass, a difficulty which they have since overcome, and their efforts to obtain a glass of a perfectly colourless nature have been crowned with success. The compound lenses, made of a number of concentric rings, as used in the dioptric apparatus, were first suggested by Sir David Brewster, and the chief advantages which they present over the old system of reflectors are, greater effect from the same light, the use of an unalterable material, and a greater facility for producing varieties of revolving lights.

WOOLLEN.

FLAX.

The plants selected in Europe for the purpose of making thread and cloth from the fibres are chiefly Hemp and Flax. They both undergo the same general preparation before they are consigned to the weaver; but the former is of a stronger and coarser texture than the latter, and is commonly employed in the manufacture of canvas and cordage, while flax is used for articles of clothing.

Flax is an annual plant, with a green stem about two feet high, crowned with handsome blue flowers, which are succeeded by globular seed-vessels, containing ten flat oblong seeds of a brown colour, from which is expressed the linseed oil so extensively used in the arts, particularly for painting. The plant is suffered to grow until the seeds are ripe, and it is then plucked up by the hand, and laid on the ground to dry in little bundles, two and two obliquely across each other. Soon after this, these bundles are collected, deprived of their seed-vessels, and placed horizontally in shallow pools and ditches of stagnant water to rot. The purpose of this part of the process is to dissolve a mucilaginous matter, which holds the fibres together, and is a very disagreeable operation, as the smell arising from the flax while rotting is extremely offensive and prejudicial to the health. When the steeping is effected, the bundles are taken out and untied, and the flax is spread out upon a piece of clean smooth grass, which has been mown or fed off close, and there it is allowed to remain until the woody part becomes brittle: it is then beaten with mallets, which knock off the pieces of wood still adhering to the fibre, without breaking it, heckled, and so prepared by various other operations that the long fibres are got by themselves, clean and loose, in which state they are called *flax;* and the shorter and coarser fibres, separated during the process of combing, are called *tow.*

The operation of spinning, which the flax next undergoes, consists in drawing out, with the fingers, several of the fibres together, and twisting them. The result of this spinning is thread, which is more or less fine according to the dexterity of the manipulator, and the nature of the material. Some thread twisted more closely than the rest is kept for needle-work, but the greater part is made up in bundles, called linen-yarn, and committed to the weaver.

There are several varieties of flax cultivated, and in Mr. P. Claussen's collection which he contributed to the Great Exhibition, were to be found specimens of flax grown in England, France, Russia, and Holland. The English plant is considered to produce the best fibre, and the foreign the best linseed. Mr. Claussen has introduced many improvements in the "handling" of flax, and can so modify its substance as to make it susceptible of being spun by the usual cotton machinery: and this result has been obtained through microscopic researches into the structure of the flax plant, and the application of chemical knowledge to the improvement of old processes for preparing it for use. The ultimate result of these experiments can scarcely be foreseen, but it is to be hoped that soon some extensive trials in the cultivation of flax in this country will be made, for as a manufacturing material it would prove exceedingly valuable, and render us more independent of the United States, which supply us with nearly all the cotton used in our textile manufactures. Since the failure of the potato crop, Ireland and Scotland have been in a position to seize eagerly upon any new culture which promises moderate success, and since the repeal of the corn laws, many landowners in England have been urging their tenants to turn their attention to the culture of flax.

At a meeting of the British Association at Edinburgh in 1850, an able paper was read on this subject by the late Mr. G. R. Porter, Secretary to the Board of Trade, who said: "Hitherto we have in this country been greatly dependent upon our foreign importation for supplies of flax. While the law imposed restrictions upon the importation of grain for human food, there existed a kind of impediment in the way of increasing our home growth of articles for any purpose not of equal primary necessity. That impediment is now removed; and there can be no reason why our fields should not be henceforth used for the production of any article that promises an adequate profit to the farmer." The chief seat of flax manufactures in England is Barnsley; in Scotland, Dundee; and in Ireland, Belfast: the export of linen goods is already very considerable, but is certainly on the increase, as a large quantity of land is now sown with flax seed every year in Somersetshire, Lancashire, and other parts of the United Kingdom.

One of the prominent objects in the accompanying plate is the fountain, in artifical stone, exhibited by Mr. Seeley, and described as "suitable for a market place in a provincial town." We were not before aware that the inhabitants of our country towns were so utterly devoid of taste, as to render it necessary to design such ugly things to adorn their public squares: and we think that it was injudicious of the Royal Commissioners to deface the Exhibition of Industry of all Nations, with a huge object which only excited the well merited criticisms of those who had been accustomed to enjoy the skilfully designed fountains of Italy and France.

80870

FLAX

Dickinson, Bro^s 114, New Bond Street

FURS.

ALTHOUGH in the most barbarous ages men clothed themselves in furs, the same materials, under certain modifications, are, now that the world has attained a high degree of cultivation and civilization, considered among the most precious of garments. The earliest mention of skins is made in Scripture, where occur the words, "Unto Adam also, and to his wife, did the Lord God make coats of skins and clothed them." On those valuable sculptures lately sent to England from Assyria, which bring to light records of the manners and customs of a mighty nation, whose history might otherwise have remained buried in its original obscurity, men are pourtrayed in fur garments; the Persians, Greeks, and Romans were familiar with their use as articles of clothing and trophies of victory; and in our own country rich furs have often been the friendly offerings of princes to each other, and the tokens of grace and privilege to their favourites, high rank and distinction being marked according to the kinds worn.

In the accompanying Plate is represented the very extensive display of Furs which were contributed by Messrs. Nicholay and Son, the Court Furriers, to whom, besides, the Hudson Bay Company entrusted the produce of their territories in the Polar regions. Among the most interesting of the skins exhibited, may be remarked that of the Black Fox, valued at £50 each, and of which is composed the celebrated pelisse, belonging to the Emperor of Russia; manufactured and undressed specimens of the Fur Seal, resembling the richest velvet, and of the Beaver, which was in former years one of the Hudson Bay Company's most valuable productions; while along the front of the gallery were hung the skins of lions, bears, royal tigers, buffaloes, &c., &c., dressed to a beautiful softness, and adapted for carriage and sleigh wrappers, table-covers, and many other useful and ornamental purposes. Messrs. Nicholay exhibited in their collection a specimen of the Ornithorhyncus, a native of Australia, which appears to be the connecting link between bird and beast, having the bill and webfoot of the duck, and the body and claw of a beast. The skin resembles that of the otter, and seldom exceeds twelve inches in length. The male is furnished with two spurs on each hind leg, like the game-cock; the female lays eggs, which she hatches, and then suckles her young brood. Altogether, from the description given, which must be credited on account of the unimpeachable authority* on which it is based, this animal appears to be one of the most extraordinary in nature.

The Hudson Bay Company's annual importation of skins is sold by auction twice a year, in March and September, and these sales are attended by merchants from the most remote parts of the world. In the olden time, when the fur trade was carried on under the stringent regulations of the Skinners' Company, the skins were sold in a very singular manner, namely, by the candle. The following was the mode of proceeding: a small piece of wax taper was supported on a tripod, and placed on the long table, round which were collected the buyers; as soon as a lot was put up, the candle was lighted, the bidding commenced and continued until the taper burnt out, and as it fell down, the last bidder was declared the purchaser.

The class in which Furs were placed also included Feathers, and Messrs. Nicholay exhibited under a glass case a muff and boa, which excited much well-merited admiration. They were made of the down from the feathers that are used for state and military plumes, known as the Aigrette, and which are procured from a bird of the Heron species, called the Egret. The costly nature of the material is such, and its rarity so great, that three other sets only have been made during the present century; viz., for the Empress of Russia, for the Duchesse de Berri, and for Madame Adelaide, sister to the late King of the French.

The principal display of feathers, however, was by Messrs. Adcock and Co. Of the various kinds employed as plumes for head-dresses, the most important are those of the ostrich, which were exhibited in all the variety of forms in which they have been worn during the last fifty years. There was a fine collection of the feathers of the Birds of Paradise, among which some were dyed several different colours. The difficulty of this process in certain cases will be conceived, when it is considered that naturally the plumage of the Bird of Paradise is of a golden bright hue. Many of the feathers in this case were very scarce, and some of the most valuable were mounted in gold and silver.

The large astronomical telescope in the Nave, mounted on a cast-iron stand, nearly eleven feet high, was manufactured by Mr. A. Ross. The diameter of the object-glass was eleven and a half inches, and being provided with equatorial movements and other adjustments, was a fine specimen of the kind of instrument, which, with its minute and rather complicated machinery, is requisite for penetrating into the regions where the eye cannot travel unassisted. At the foot of this telescope were a number of other optical and philosophical apparatus, invented and manufactured by Mr. A. Ross.

* Sir H. Halford.

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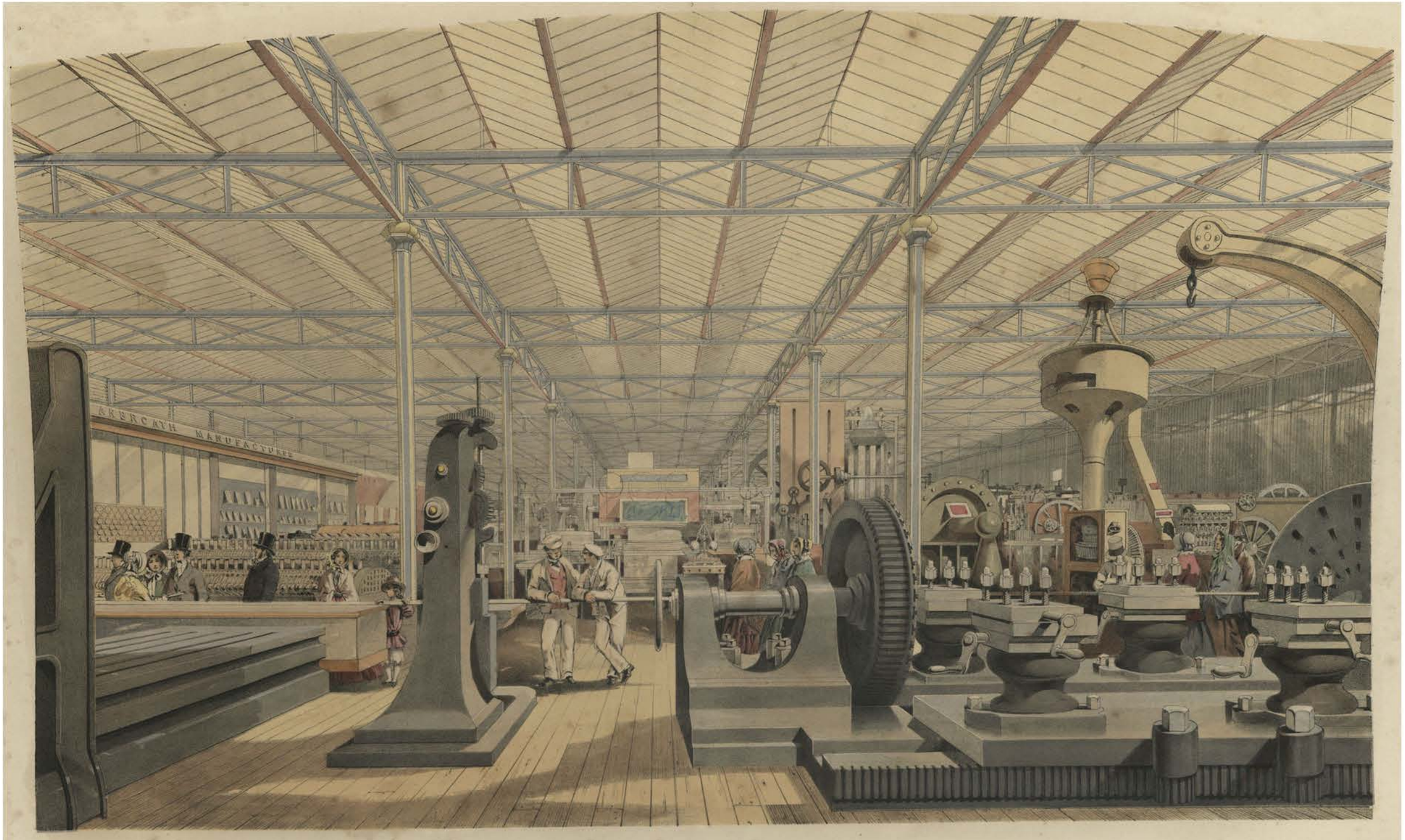
MOVING MACHINERY.

IMAGINATION is as essentially necessary to the man of science as to the poet; all scientific objects are promoted by experiments, and these cannot be contrived without the aid of imagination: it must be stated hypothetically that such and such a combination produces a certain result, and then experience is nothing more than the realisation of that supposition. This faculty is the great spring of human activity and the principal source of human improvement; those who possess it can never be perfectly satisfied with their present condition, or with their past attainments, but are continually urged on to discover some untried enjoyment, or some ideal excellence. Once convinced of the importance of imagination, we never can contemplate the experiments of scientific men as a waste of time, or as the mere gratification of a worthless curiosity, but we will look upon them as the germs of those improvements, by which civilization, knowledge and morality may be more extensively diffused among the various nations of the world.

If, then, it be granted that imagination is essential to the inventions of scientific men, we will advance further and uphold the opinion that imagination may be of service also in teaching a useful lesson to those, for whose comfort or convenience human ingenuity has been exerted. Will the idea be stamped as utopian, that after the Almighty had crushed Adam under that awful anathema, "cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life: in the sweat of thy face shalt thou eat bread, till thou return unto the ground," He should mercifully put it into man's own power to restore himself to his pristine happiness and excellence; and that when He planned the Redemption He should, with a view of accomplishing His own scheme, inspire one man with the spirit of science, another with the spirit of literature, another with the spirit of art, all contributing to build up the edifice of man's re-established perfection?

We believe that the inventions of men have a tendency to remove a great part of the curse which has tormented the world for nearly six thousand years. On every side we see the *effects* of that curse; we cannot, and we do not flatter ourselves that we are emancipated from its consequences, or that the punishment of Adam was a mere threat. On the contrary, where we find the curse, there we also find a fierce war waged by man against his acknowledged foe; where there is disease, we find the physician who has devoted his life to the discovery of antidotes: where there is famine, we find agricultural science labouring to increase the treasures of the soil: where the lightnings of heaven ravage the earth and destroy men's lives, there we see the long tapering conductors drawing off the electricity of the thunder cloud, so that the lightnings shall no longer prove destructive to man, and to the labour of his hands.

All the inventions of human ingenuity and skill, and the diffusion of general knowledge, may be looked upon as preparing the earth for that milennial era which is prophesied in the Revelations. But we need not seek further than the accompanying plate for an illustration of the idea, that the more we are able to diminish the labour of man, which God intended should be his chastisement, the further we remove the curse, and the nearer we approach to our original perfection. Take for instance Whitworth's Stand of Engine Tools: his peculiar genius has enabled him to effect such a convenient arrangement of the different parts of each, that his machines are almost self-acting, leaving nothing for the workman to do, except to fix his work and keep his tools sharp: consequently Mr. Whitworth can produce better work by comparatively raw hands than formerly could be done slowly by the most skilful workmen at very high wages. Then turn to Appold's Centrifugal Pump, which was an excellent example of the modern religion of mechanics,—making a small machine do a great deal of work by running it at great speed, thus saving a large outlay in the cost and size of the apparatus, and dispensing with a vast amount of human labour. Thus it is that we would look on all scientific men as instruments in the hands of Providence, working for the melioration of the human race; and we feel that we cannot better conclude, than by awarding our tribute of admiration to him who was the chief of this cohort, the originator of all the improvements in modern science; for it would be in vain to attempt to value the debt we owe to "the man whose genius discovered the means of multiplying our national resources to a degree perhaps even beyond his own stupendous powers of calculation; bringing the treasures of the abyss to the summit of the earth; giving the feeble arm of man the momentum of an Afrit; commanding manufactures to arise, as the rod of the prophet produced water in the desert; affording the means of dispensing with that 'time and tide which wait for no man;' and of sailing without that wind which defied the commands and threats of Xerxes himself."



MOVING MACHINERY.

Dickinson, Pat.r 114, New Bond Street.

MACHINERY.

The immense display of machines of every description in the Great Exhibition, raised England to a proud position amongst the rival nations, as all her contributions stood pre-eminent for novelty, for usefulness, and for perfection of workmanship. Here, were marine steam-engines with four cylinders, of seven hundred horse power, which were said to be the largest yet made for vessels with screw-propellers: there, were new and gigantic locomotives with eight wheels, after Crampton's designs, which could run with perfect ease at the rate of seventy miles an hour, from the peculiarity of the position of the driving wheels, the axle of which was placed behind the firebox, an arrangement which gave great comparative steadiness of motion, especially at high speeds. In front, was reared the Great Hydraulic Press, which was remarkable not only for its size, but for the various contrivances for holding the chains by which the tubes of the Britannia Bridge were raised over the Menai Straits, that triumphal arch of modern engineering, under which a line of battle ship can pass with all her sails spread to the wind; while on every side, around these stupendous apparatus, thousands of little machines, which well deserved the epithet of beautiful, were hard at work, and ingeniously occupied in the manufacture of all sorts of useful articles, from knife handles to envelopes. In this Department, which might well be called the great park of machinery, a thoughtful observer could easily discover the distinctive character of the English nation, as regards political economy;—Englishmen employ their capital, but are ever seeking for mechanical means to work it.

According to the classification of Dr. Lyon Playfair, which was adopted by the Royal Commissioners, Machinery formed one of the four great divisions into which specimens of all the objects that could be exhibited, were distributed. This division was sub-divided into six classes:—1. Machines for direct use; 2. Manufacturing machines and tools; 3. Mechanical, civil engineering, and architectural contrivances; 4. Naval architecture and military engineering; 5. Agricultural and horticultural machines and implements; 6. Philosophical, musical, horological, acoustic, and miscellaneous instruments. This classification gave to the word "machinery" a far more extended application than it ever received before; but whether Dr. Playfair was right or wrong, in comprising under one head articles which until then had always been classed separately, the above arrangement was certainly exceedingly convenient for the immediate object which he had in view, and he therefore deserves infinite praise for having been bold enough to make the term machine so comprehensive, as to include every engine or implement which conveyed, in a modified form, the power, whether animal, or of artificial production, applied to it.

The artist has been as bold as Dr. Playfair, and has crowded into the accompanying plate such a multitude of heterogeneous apparatus, that we find it most difficult to determine which to select for remark. Foremost stands Nasmyth's steam hammer, which is too well known as having superseded the old tilt hammer to need that anything further should be said in its praise, as by it most heavy forgings are now made. The only curious fact in connexion with it, which may not be generally known, is that as far back as the year 1784, James Watt mentioned, in his specification delivered with his application for a patent, that the thought of using steam-power in connexion with a hammer had occurred to him; but he had never worked out the really useful mode of applying the hammer, that of attaching it to the piston-rod itself: and it is to the genius of one of our own times that is due the carrying out of this important step.

Amongst the numerous fire-engines and pumps, the water-ram, by Messrs. Easton and Amos, may be mentioned as an exceedingly simple and effective apparatus, by which many country mansions are now supplied with water; the only indispensable requisite being the existence of a small stream in the neighbourhood. Close by, stood the model of Maplin's light-house, founded on Mitchell's screw piles, the plan of which is admirable for sandy bottoms where piles are driven in with great difficulty. Lastly, we would wish to add one word of commendation to Messrs. Ransome and May's water-crane, intended to be used on railways, which was very ingeniously arranged with a rising hinge, so that it moved itself out of the way of the trains, when not required for filling the tender. But no description of the Machinery Court can give an adequate idea of the importance of its contents to those who did not visit it: a week's examination was insufficient to exhaust all its treasures; how then can we hope to do more than assist the memory to recall more vividly a scene which once beheld can never be forgotten?

MACHINERY

MINERALS.

GREAT BRITAIN is the most favoured country in the world for the development of mineral industry, from two highly important conditions. In the first place, fuel, the indispensable agent in the treatment of metalliferous ores, and the most powerful element in the production of motive force, is found in abundance in several districts of England, Scotland, and Ireland; the value of some of these coal basins is greatly increased by the abundant distribution of the ores of iron among them, and each one so circumstanced has become the centre of a metalliferous district, where numerous works produce iron at a cost so trifling as to annihilate at once the chance of a successful competition by any other nation in the world. Secondly, the insular position of Great Britain is favourable to the cheap transmission of coal not only to those places on its own coasts where it is not found, but also to every part of the world.

Mines were worked in our own country by the Romans, but during the reign of the Saxon kings they were much neglected, and subsequently to this period they were chiefly "exploited" by Jews. In the reign of Queen Elizabeth encouragement was given to German miners, long celebrated for their skill, to settle in England, as their aid was found necessary to revive so important an art fallen into decay. A great stimulus was given to the working of mines by the introduction of the use of gunpowder for blasting; the ore being originally broken down with the "pick" only, which was a very laborious and often an almost impossible process: and the invention of the steam-engine was early rendered applicable to mining operations, and contributed to the present perfect state of the art. In the beginning of the eighteenth century the rich copper mines of Cornwall were first worked, and it is there that now the most powerful engines are employed, and the greatest encouragement given to all mechanical improvements.

The contributions of the five hundred exhibitors in this department afforded a very complete display of those objects that have reference to the production of metals of daily usage; but to the greater number of visitors the mineral court presented few attractions. Notwithstanding their immense utility, the raw materials are deprived of all that brilliancy and variety of colour which gratifies the eye, and it is only when their singular forms and colossal dimensions arrest the attention and excite surprise, that a research into the peculiar conditions of their production becomes a subject of interest.

Among the smaller specimens the illustration of lead mining contributed by Mr. Beaumont's mines at Allenheads, in Northumberland, must be specially remarked. They were arranged by Mr. Thomas Sopwith so as to illustrate the peculiar mineral products of the Durham and Northumberland mining districts, the processes of dressing the ores of lead for the market, and the progress of conversion into pig lead. A case collected by the working men of Nentsberry fully showed the metallic and some of the earthy minerals from the mines in which they were employed. The main feature was however the exemplification of lead dressing, every stage of the process being illustrated, from the ore as found in the lode to the production of commercial pig lead. The separation of silver from lead, by Mr. Pattinson's process, was shown by Mr. Pattinson himself, who exhibited a cake of silver weighing 3,000 ounces, and Mr. Beaumont contributed one still larger, the weight of it being 12,162 ounces.

The process alluded to consists in separating the crystallizing lead as it forms during a process of slow cooling, and is founded on the peculiar physical fact that silver remains fluid at a temperature at which lead solidifies. These crystals of lead, as they are formed, sink to the bottom of the vessel, and on being removed are found to contain much less silver than the original lead,—hence the last portion left in the crystallization pots is exceedingly rich in silver. By this process it is commercially profitable to separate three ounces of silver from the ton of lead, whereas by the old oxidizing process it was not found worth the cost of extraction, where the lead contained less than twenty ounces of silver to the ton.

The contributions of the Duke of Buccleuch contained some very beautiful specimens of the rarer carbonates of lead, and some of the arseniates. The Official Catalogue contains a very full description, by Col. Lloyd, of the system adopted for the purpose of obviating the noxious effects of the fumes passing from the shafts of the furnaces, and poisoning the neighbourhood, which appears to have been quite successful.

The specimens of lead ore exhibited by the Arkansas Mining Company contained a hundred and fifty ounces of silver to the ton, a degree of richness scarcely ever to be met with, and this gave a pecular physical structure to the ore, which did not break up into cubes, as lead ore generally does, but into lamina. Close to these specimens was a section of the Devonshire lode from the Grassington Mines, and was very remarkable as showing the mode of metalliferous deposit in a mineral vein; lead usually occurring in beds of limestone. The cubes of galena (sulphuret of lead) from Laxey, in the Isle of Man, were certainly the largest ever produced.

On the tables in this Section of the Exhibition, were many remarkable illustrations of Cobalt, of Barytes, and the ores of Bismuth, Antimony, and Tungsten, besides numerous other specimens of lead ores from different localities in the north of England and of Wales, but it has been thought advisable to confine the attention to the objects more immediately brought under notice in the accompanying View of the Mineral Court.

MININC

COTTON, CARRIAGES &c

Dickinson, Bro.s 114 New Bond Street

EXTERIOR. COALS, ETC.

GREAT and noble achievements are always of slow growth, and the Exhibition of the Works of Industry of all Nations was not an exception to that rule. To say that it did not arise out of the wants, necessities and aspirations of the present age, is to say that it was born out of season, and that its foundations had not been thoroughly and well laid, prior to the erection of the immense superstructure which sheltered the productions of all the nations of the earth: the Crystal Palace did not spring into existence like Minerva, fully grown, armed and accoutred from the head of Jupiter, but was the result of a full and complete perception of the innumerable advantages which were to be derived from the accomplishment of a proposition emanating from the mind of His Royal Highness Prince Albert, and it was to his zeal and talent in superintending and working out its details, and his thorough earnestness in its promotion under many serious discouragements, and under an active and well-planned opposition, that is due the success which attended the development of an idea originating with the Society of Arts, of which His Royal Highness had become President.

It can readily be imagined that the subject of a building suitable for the purposes in view, was one of early and anxious deliberation on the part of the Royal Commissioners; and of the innumerable and complex difficulties which they had to overcome, this must assuredly have been one of the most insurmountable. Great as was the difficulty, however, it was requisite to grapple with it: and the Committee appointed to act in all matters relating to the building, issued a document which invited all the architectural talent in the world to provide designs for competition in the great work. This document called forth designs from two hundred and thirty-three competitors, thirty eight of which were contributed by foreigners, and the rest by residents in England, Scotland and Ireland. The Committee did not bind themselves to accept any one of these designs, and found that although many of them were remarkable for elaboration of thought and elegance of execution, they all failed to combine the many requisites which various considerations rendered essential. Under these circumstances the Committee prepared a design of their own, availing themselves of the suggestions contained in several of the plans contributed for competition, and having submitted it to the Royal Commissioners, it was adopted and they were authorised to proceed with the necessary drawings and specifications.

Fierce war was, however, waged against the proposed structure outside the walls of the Commission room: the time of both houses of legislature was consumed night after night in preposterous discussions, until at length worsted there by overwhelming majorities, foiled in the courts of law, and covered with ridicule everywhere, this discreditable opposition died a natural death, and in disgusting all reasonable men with its factiousness, rendered probably no little service to the cause it aimed at undermining. Then it was, that Mr. Joseph Paxton, (since knighted) known as a practical botanist and gardener to the Duke of Devonshire, was quietly engaged at Chatsworth in elaborating plans for a building destined in a greater degree to elicit public approval, and singular to say, he succeeded against the united talents of three of the most eminent engineers, and three of the most remarkable architects of the country!

Sir Joseph Paxton has thus described his labours: "Gigantic as the building was, it was conceived and framed by him in a small space of time. He need not, however, state that it was not done without a great deal of forethought, aided by the experience he had in constructing other great buildings. . . . He asked the Executive Committee whether they were so far committed to the plans, as to be precluded from receiving another; the reply was, 'certainly not.' This was on Friday the 11th of June. From London he went to the Menai Straits to see the third tube of the Britannia Bridge placed, and on his return to Derby, he had to attend to some business in the board-room, during which, however, his whole mind was devoted to his project; and whilst the business proceeded, he sketched his design upon a large sheet of blotting-paper. . . . He sat up all night until he had worked it out to his own satisfaction, and by the aid of his friend, Mr. Barlow, he was enabled to complete the whole of the plans by the Saturday following, on which day he left Rowsley for London." The public have long known what followed: Sir Joseph Paxton's glazed Palace was eventually chosen unanimously not only by the Building Committee, but by the Royal Commission.

Within the space at the western end, outside the building, were gathered a collection of such things as could not be well placed in the building. Large masses of coal, cement and concrete, and several examples of the Welsh, Cornish, Scotch and Irish slates and flags, were exhibited on the south side: while on the north, were several atmospheric apparatus for recording meteorological observations, admiralty anchors, and granite columns and obelisks. The object which attracted most admiration was placed at some distance outside the western end of the building: there, Richard Cœur de Lion was grasping his uplifted sword with energy and determination. In this bronze statue by Baron Marochetti, the figure, expression and attitude of the rider are grand and commanding, but the horse, though its head is animated, is defective in its hinder quarters, and appears quite unequal to bear its lofty and important burden.

THE EXTERIOR.

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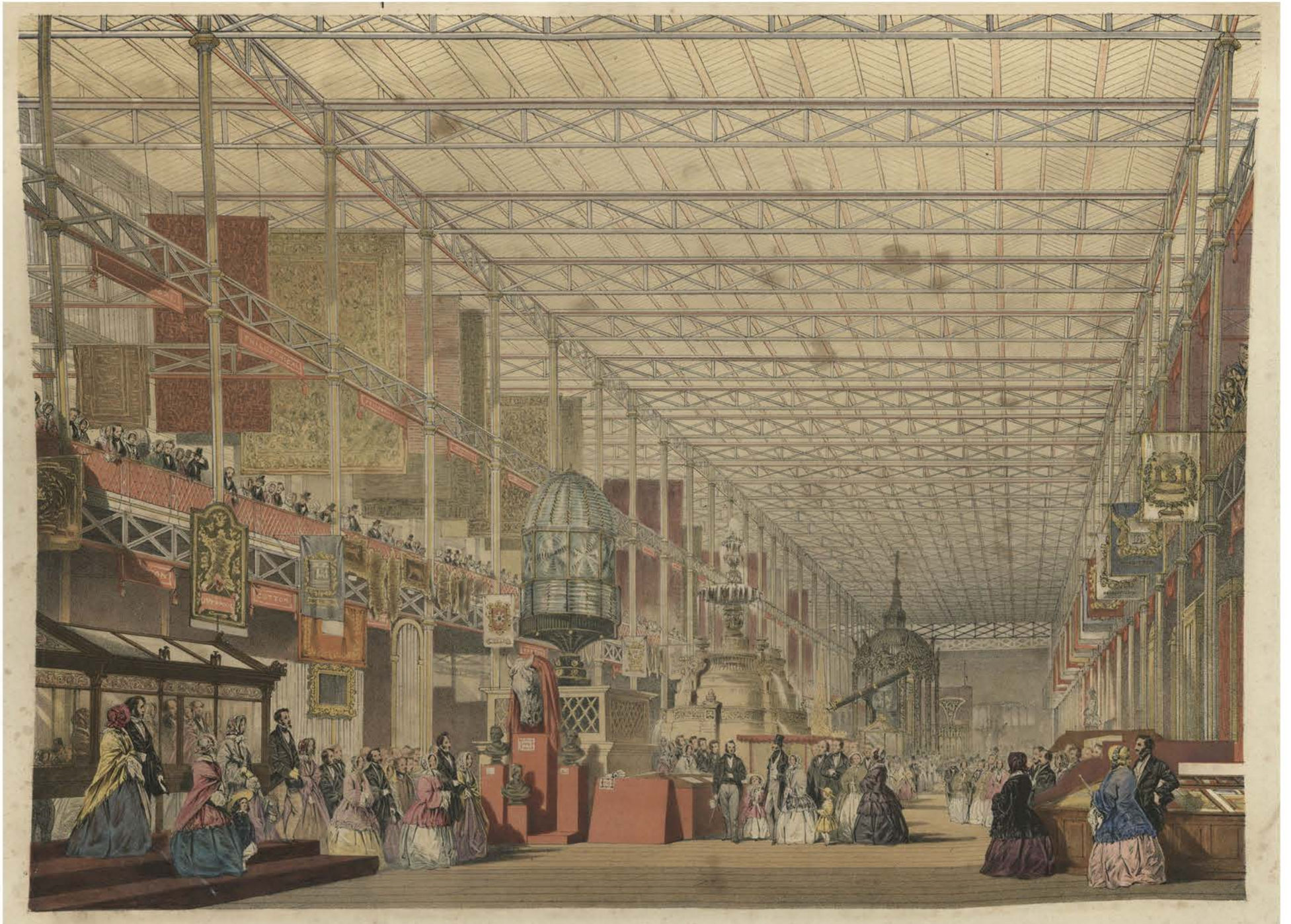

THE BRITISH NAVE.

Dickinson Brothers, New Bond Street.

CLOSING CEREMONY.

On the 15th October 1851, the Exhibition of the Industry of all Nations was finally brought to an end. After more than five months of glorious existence, after having been inspected and enjoyed by above six million visitors, who flocked to the Metropolis of England from every quarter of the globe, the Royal Commissioners decreed that the great work was accomplished, and that it was time to close the splendid and gorgeous arena, where twenty-six different nations had displayed their various productions to compete in peaceful rivalry for the prizes to be awarded to all meritorious contributions, by men of the most exalted rank, and of the most eminent reputations in statesmanship, in science, in literature, in manufactures, in commerce, and in the fine arts, from all parts of the world. Then it was that Viscount Canning, who had acted as President of the Council of Chairman of the Juries, submitted to His Royal Highness Prince Albert and the other Commissioners, the principle on which the numerous awards had been made, and which had only been adopted after the most mature deliberation, as in no department of the vast undertaking had there been greater difficulties to overcome.

Everybody knew that the Exhibition had been an "immense success;" that so far from entailing a call on the Government for pecuniary assistance, a large surplus was in the hands of the Commissioners: everybody had experienced great personal pleasure and profit during an examination of the collections of machines, manufactures or fine art, and felt deeply how useful and interesting, and at the same time, how elevating the spectacle had been to the multitudes who came to study or to admire: everybody had felt it so obligatory to go and see for himself, to gain a knowledge of things of which he was ignorant, to admire in all their perfection, productions with which he was well acquainted, and to compare them with those of other nations, and then to feel that experience had given him a right to praise their excellent points and to decry their deficiences, and so universal was the affirmative answer to the great question of the day, "Have you been to the Exhibition?" that it became almost possible to point to the solitary individual who would remain blind to the advantages of the undertaking, however patent they might be made to him, and who refused to look upon the whole enterprise in any other light but that of a "vast humbug."

It was when the Palace of Industry was to be closed that men turned to the question of how these various contributions which had been so long displayed for their improvement and their gratification, were to be distinguished from one another, how the world was to learn the grounds on which the productions of one nation were superior to those of another. From the 1st of May to the 15th of October, a period of twenty-three weeks, during which the Exhibition remained open, the Queen accompanied by H. R. H. Prince Albert, paid thirty-five visits to the different departments, and carefully examined every object of interest and beauty contained within the crystal walls. The Exhibitors appreciated Her Majesty's kindness, and as far as personal feeling might extend, they probably would have been satisfied with the honour, and treasured up for their own gratification, the expressions of approval and admiration which fell from her lips. But this was insufficient for the world at large, and while it was gazing in wonder and delight, a body of world-renowned men devoted themselves to the thankless and arduous task of delivering judgment upon at least a million articles.

The difficulties which at first sight appeared to them insurmountable, were overcome, and certainly if any accidental omissions did occur, they could not be attributed to want of care or diligence on the part of the Jurors. With a few exceptions their decisions gave great satisfaction, and the Exhibition closed with a harmony as perfect as had previously prevailed both within and without its walls, and which cannot end with the event which produced it. "Let us," in the words of H. R. H. Prince Albert, on that day when he saw the undertaking which his own genius had so brilliantly carried out, brought to a happy close, "receive this harmony as an auspicious omen for the future; and while we return our humble and hearty thanks to Almighty God for the blessing He has vouchsafed to our labours, let us all earnestly pray that that Divine Providence which has so benignantly watched over and shielded this illustration of nature's productions, conceived by human intellect and fashioned by human skill, may still protect us, and may grant that this interchange of knowledge, resulting from the meeting of enlightened people in friendly rivalry, may be dispersed far and wide over distant lands; and thus by shewing our mutual dependance upon each other, be a happy means of promoting unity among nations, and peace and goodwill among the various races of mankind."

CLOSING CEREMONY

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